



Investment Practices and Performance Evaluation

Odessa Firefighters' Relief & Retirement Fund

Final Report

Submitted to the Board

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Investment Practices and Performance Report Odessa Firefighters' Relief & Retirement Fund

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Independent Fiduciary Advisor Attestation

1) A summary outlining the qualifications of the firm.

Southeastern Advisory Services, Inc (SEAS) is Atlanta-based investment consultant founded in 1986. The firm provides independent investment advice to institutional clients. SEAS serves as a fiduciary to every client. The firm does not provide custody, manage money or receive revenues from any source other than clients. SEAS follows the CFA Institute's standards for best practices and investment governance. SEAS endorses the CFA institute's pension trustee code of professional ethics.

2) A statement indicating the nature of any existing relationship between the firm and the system being evaluated.

SEAS serves as the investment consultant to the Odessa Firefighters' Relief & Retirement Fund.

3) A list of the types of remuneration received by the firm from sources other than the retirement system for services provided to the system; and

SEAS does not receive remuneration from any third-party source(s). The firm accepts fees only from its clients. There is no outside compensation related to SEAS' responsibilities to the retirement system.

4) Statement acknowledging that the firm, or its related entities, is not involved in directly or indirectly managing investments of the system.

SEAS is not involved directly or indirectly in managing investments of the Plan.



Findings and Recommendations

Southeastern Advisory Services (SEAS) completed an analysis of the investment practices and governance policies on behalf of the Odessa Firefighters' Relief and Retirement Fund ("OFRRF", the "System, or "Plan") as required by Texas Code 802.19, created by Senate Bill 322 and applicable to Texas Public Retirement Systems with assets over \$30M.

The OFRRF Board has recently addressed many of its compliance and internal policies:

Changes made from 2019 - 2000

Prior to 2019 the Plan utilized one asset manager who also served as the investment consultant and the custodian. Since this time, the Board has:

- Issued an RFP for an independent investment consultant
- Hired an independent asset consultant (SEAS)
- Redrafted, updated the investment policy document in 2019 and 2020
- Issued an RFP for an independent custodian
- Hired an independent custodian
- Conducted an asset allocation study
- Conducted several asset manager searches
- Selected and funded several independent asset managers

During this two-year process the OFRRF Board made tremendous progress towards improving its fiduciary oversight. Based on our independent review, it is our opinion that the Plan's policies, governance, and investment practices are suitable and consistent with best practices¹ of public pension plans. The Plan has identified several "Opportunities for Improvement" as outlined in the questionnaire section of this analysis (pages 6-23).

1) Analysis of Investment Policies

The Plan's IPS is clear in describing the purpose and investment objectives, how asset managers are to be benchmarked and evaluated, and how rebalancing is to be accomplished. The Board has correctly conducted an annual reviews and updates of the IPS document. The IPS thoughtfully explains the investment managers' responsibilities, however it is silent regarding the roles and responsibilities of other investment related fiduciaries and vendors. The IPS is also silent on identification of the criteria used to evaluate future target investment managers. The current IPS does not consider the funded status, cash flows and liabilities. While the Board has a stringent process in place to track fees that is consistent with SB 322, this practice is not articulated in the IPS.

We recommend that the 2021 IPS² is updated to include: 1) the fiduciary duties and responsibilities of the investment related vendors 2) consideration of the funded status, liabilities, and cash flows 3) the criteria to be utilized in manager selection 4) the existing practice for the measurement and disclosure of plan fees.



2) Review of The Plan's Investment Asset Allocation

OFRRF has a practice of reviewing capital market assumptions annually and conducting strategic asset allocation studies periodically. The asset allocation policy considers capital market assumptions of each asset class in order to meet its investment goals. The analyses include, portfolio optimization, stress testing and loss evaluation (Value at Risk). Formal allocation studies have also considered the inclusion of outside asset classes not currently utilized by the plan. Also considered are the cash flows of the plan and its tolerance for illiquid investments. The process used by the plan has resulted in fully diversified asset mix, including active management, passive strategies and alternative investments.

The plan's policies for asset allocation studies are deemed prudent and consistent with best practices¹. While there is a constructive practice in place, there is no formal policy stating the frequency for these reviews. We recommend that the 2021 IPS² include the current practice and frequency for reviewing the investment asset allocation.

3) Review of the appropriateness of investment fees and commissions paid

OFRRF maintains a comprehensive fee disclosure in its quarterly performance reporting. This reporting evaluates direct fees, indirect fees and the fees paid to outside investment related vendors including the custodian and investment consultant. The Plan's reporting also captures any commissions and other fees. The fee reporting is updated quarterly. Investment performance is measured both gross and net of fees. We also found the total investment expenses percentage to be acceptable based peer group expense comparison³.

The reporting of fees is comprehensive, updated quarterly and, in our opinion, consistent with PRB guidance and SB322. We found the Plan's fees to be reasonable and competitive relative to peers³.

4) Review of The Plan's governance processes related to investment activities

SEAS evaluated the Plan's governance and investment processes, delegation of investment authority, Board investment expertise, and trustee education. The Board complies with Texas Chapter 607 for Minimum Educational Training (MET) requirements for trustees.

We found the Plan's governance practices robust and evidence of diligence in fulfilling its role of fiduciary. We recommend that the Plan review of vendor contracts regularly to ensure cost savings and possible improvements over time. We also recommend formalizing the current practice for trustee education and periodic vendor review into a written Plan policy.⁴

5) Review of The Plan's investment manager selection and monitoring process

Investment manager candidates are sourced through the Investment Consultant's internal research. The ultimate selection of investment managers is determined solely by the Board. There is not a formal Board policy in place for evaluating potential investment manager candidates, including minimum requirements or formal selection criteria.

The Plan has a robust process for monitoring manager performances including benchmarking and peer groups; as well as clearly defined criteria for reviewing and replacing investment managers. The performance reporting is "digestible" with clear lines of performance accountability. We found the practice of quarterly investment review to be rigorous.



We recommend that the 2021 Investment Policy identify formal criteria for consideration of future asset managers with minimum standards for potential candidates including GIPS, ethical considerations, and potential conflicts of interest².

Notes:

¹ *“Best practices” are those identified by the CFA institutes codes, guidelines, and standards or those defined by the Center for Fiduciary Studies.*

² *The Plan has agreed to adopt a revised version of its IPS, referenced herein as the 2021 IPS.*

³ *Per the PRB’s “Intensive Actuarial Review: Odessa Firemen’s Relief and Retirement Fund” Dated September 2019, Page 22. OFRRF’s total fees (direct and indirect) are now approx. 65 basis points (As of 6/30/20).*

⁴ *OFRRF is a qualified TELFRA plan. Section 13.01.d of the Plan Document provides the Board of Trustees shall establish uniform rules and procedures to be followed for administrative purposes, benefit applications and all matters required to administer the Fund. The Board is in discussions with its attorney to expand the Plan Document or to Establish a Plan Charter to include the OFIs recommended herein. This would serve to establish a single, centralized location for Board governance, and non-investment related policies, practices and procedures.*



TEXAS Performance Review Questionnaire

The TEXAS PENSION REVIEW BOARD (“PRB”) provided guidance for ‘Investment Practices and Performance Evaluations’ as required by Senate Bill 322. When SEAS determined that the Plan may have an Opportunity to Improve (“OFI”) it so noted in the questionnaire below. We have also provided explanation on how the Plan has decided to address the opportunity in the future.

Each evaluation must include:

(1) an analysis of any investment policy or strategic investment plan adopted by the retirement system and the retirement system’s compliance with that policy or plan;

1. Does the system have a written investment policy statement (IPS)?

☒ Yes

☐ No

The PRB is familiar with the Plans’ IPS document following the September 2019 Intensive Actuarial Review.

2. Are the roles and responsibilities of those involved in governance, investing, consulting, monitoring and custody clearly outlined?

☐ Yes

☐ No

☒ Opportunity for Improvement (OFI)

The Plan intends to update and expand the 2021 IPS² to include well-defined roles and responsibilities investment-related vendors, and minimum criteria for considering asset manager candidates. We also recommend that the Board review its Plan Document or consider a Plan charter to consider an explanation of Board governance and a method for periodic review of all vendors.

3. Is the policy carefully designed to meet the real needs and objectives of the retirement plan?

☒ Yes

☐ No



3a. Is it integrated with any existing funding or benefit policies? (i.e. does the policy take into account the current funded status of the plan, the specific liquidity needs associated with the difference between expected short-term inflows and outflows, the underlying nature of the liabilities being supported [e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.])

- ☐ Yes
- ☐ No
- ☒ Opportunity for Improvement (OFI)

We recommend that the investment policy is updated to include the current funded status, liquidity needs and liabilities.

4. Is the policy written so clearly and explicitly that anyone could manage a portfolio and conform to the desired intentions?

- ☒ Yes
- ☐ No
- ☐ OFI

5. Does the policy follow industry best practices? If not, what are the differences?

- ☒ Yes
- ☐ No
- ☐ OFI

The current IPS document follows best practices. The Plan intends to update the 2021 IPS to include the OFIs identified herein.

6. Does the IPS contain measurable outcomes for managers?

- ☒ Yes
- ☐ No
- ☐ OFI

Does the IPS outline over what time periods performance is to be considered?

- ☒ Yes
- ☐ No
- ☐ OFI

The IPS states that necessity to evaluate performance over the long-term when formulating policies and strategies. The IPS identifies the specific performance objectives for asset managers are to be achieved over rolling three-to-five-year time periods.



7. Is there evidence that the system is following its IPS?

☒ Yes

☐ No

☐ OFI

7b. Is there evidence that the system is not following its IPS?

☐ Yes

☒ No

☐ OFI

8. What practices are being followed that are not in, or are counter to, written investment policies and procedures?

The Board has constructive practices in several areas such as IPS review, periodic asset allocation studies, and fee disclosure that are not formalized in the IPS document. The Board intends to include these practices in the 2021 IPS.

9. Are stated investment objectives being met?

☒ Yes*

☐ No

☐ OFI

**The plan has met its investment objectives since the 2019 IPS was developed and new asset managers have been identified. While these actions have resulting in exceeding the IPS performance goals in the one and two year time periods, the longer-term rolling returns and peer rankings that are listed in the IPS are yet to be achieved.*

10. Will the retirement fund be able to sustain a commitment to the policies under stress test scenarios, including those based on the capital markets that have been experienced over the past ten, twenty, or thirty years?

☒ Yes

☐ No

☐ OFI

The Plan's 2020 asset allocation study included monte carlo simulation, stress testing and loss evaluation.



11. Will the investment managers be able to maintain fidelity to the policy under the same scenarios?

- ☒ Yes
- ☐ No
- ☐ OFI

Each asset manager is responsible only for its allocation Plan assets. Each asset manager is evaluated based on unique benchmarks, risk scoring and peer group comparisons. For this reason, each investment manager is agnostic with respect to the Plan's broader performance objectives and/or risk considerations.

12. Will the policy achieve the stated investment objectives under the same scenarios?

- ☒ Yes
- ☐ No
- ☐ OFI

The Board understands its long-term time horizon and has accepted that near-term and intermediate-term drawdowns/corrections will occur. These return scenarios have been considered in setting the overall asset allocation. The investment policy will be modified through time to reflect the changing demographics, funding scenarios, etc. The Board is working with the plan sponsor to address its funding issues.

13. How often is the policy reviewed and/or updated? When was the most recent substantial change to the policy and why was this change made?

The IPS has been updated annually. The most recent change was made in February 2020. The 2020 IPS changes included a reduction in the assumed rate of return, updated permissible ranges for assets classes, and the inclusion of a discussion on "how risk is measured and reasonable levels of risk".*

**This was a PRB recommendation in the September 2019 Intensive Actuarial Review.*

(2) a detailed review of the retirement system 's investment asset allocation, including:
(A) the process for determining target allocations;

1. Does the system have a formal and/or written policy for determining and evaluating its asset allocation? Is the system following this policy?

- ☒ Yes
- ☐ No
- ☒ OFI

The system has a practice of reviewing capital market assumptions annually and the asset allocation periodically. A written policy that includes the frequency asset allocation review/study is to be included into the 2021 IPS document.



2. If no formal policy exists, what is occurring in practice?

- *Practice - The IPS has been reviewed annually.*
- *Practice - Capital market assumptions and the assumed rate of return have been reviewed annually.*
- *Practice - An asset allocation study was last completed in February 2020 with intention to conduct a similar study every three-to-five years.*

3. Who is responsible for making the decisions regarding strategic asset allocation?

The Board with guidance from the investment consultant.

4. How is the system's overall risk tolerance expressed and measured? What methodology is used to determine and evaluate the strategic asset allocation?

A broad risk tolerance assessment has been adopted verses a methodology.

5. How often is the strategic asset allocation reviewed?

See #2 above.

An asset allocation study was last conducted in February 2020. The Board evaluates its strategic asset allocation through a formal asset allocation study every three-to-five years and more frequently if there is a significant change to funded status / cash flows. Capital market assumptions and the assumed rate of return (which include the strategic asset allocation) are reviewed annually.

6. Do the system's investment consultants and actuaries communicate regarding their respective future expectations?

Yes. These professionals communicate frequently.

7. How does the current assumed rate of return used for discounting plan liabilities factor into the discussion and decision-making associated with setting the asset allocation? Is the actuarial expected return on assets a function of the asset allocation or has the asset allocation been chosen to meet the desired actuarial expected return on assets?

The absolute return objective is considered during portfolio optimization and when reviewing hypothetical asset mixes; however, this is not the sole determinant in setting allocation policy. There is a relationship between the strategic asset allocation, the plans' liabilities / funding requirements and the actuarial/assumed rate of return. This is evidenced by the Board's 2020 decision to reduce the actuarial assumed rate of return.

8. Is the asset allocation approach used by the system based on a specific methodology?

☐ Yes

☒ No

☐ OFI

The Plan's asset allocation studies have incorporated several methodologies and peer reviews in determining prudent risk budgeting.



8a. Is this methodology prudent, recognized as best practice, and consistently applied?

- ☒ Yes
☐ No
☐ OFI

9. Does the system implement a tactical asset allocation? If so, what methodology is used to determine the tactical asset allocation? Who is responsible for making decisions regarding the tactical asset allocation?

- ☐ Yes
☒ No
☐ OFI

(B) the expected risk and expected rate of return, categorized by asset class;

10. How does the asset allocation compare to peer systems?

As compared to the 2019 NASRA public fund survey, the plan's target allocation to public equity is 65% -v- 49%, fixed income is 25% -v- 23% and real estate is 10% -v- 7%.

11. What are the strategic and tactical allocations?

Asset Class	Current Allocation	Target Allocation	Permissible Range
Public Equity	67%	65%	45% - 70%
Fixed Income	22%	25%	20% - 30%
Real Assets	10%	10%	5% - 20%
Cash	1%	0%	0% – 10%

There are no tactical asset allocations. Permissible ranges listed above are mutually exclusive.



12. What is the expected risk and expected rate of return of each asset class?

Horizon Actuarial 2020 Survey of Capital Market Assumptions																
Average Survey Assumptions																
Asset Class	Expected Returns					Correlation Matrix										
	10-Year Horizon		20-Year Horizon		Standard Deviation											
	Arith.	Geom.	Arith.	Geom.		1	2	3	4	5	6	7	8	9	10	11
1 US Equity - Large Cap	7.40%	6.16%	8.36%	7.06%	16.22%	1.00										
2 US Equity - Small/Mid Cap	8.76%	6.85%	9.54%	7.56%	20.22%	0.89	1.00									
3 Non-US Equity - Developed	8.33%	6.80%	9.09%	7.48%	18.05%	0.84	0.76	1.00								
4 Non-US Equity - Emerging	10.59%	7.85%	11.33%	8.42%	24.23%	0.73	0.69	0.80	1.00							
5 US Corporate Bonds - Core	2.75%	2.60%	3.74%	3.56%	5.47%	0.15	0.08	0.17	0.16	1.00						
6 US Corporate Bonds - Long Duration	3.13%	2.70%	4.11%	3.56%	10.16%	0.14	0.07	0.14	0.11	0.86	1.00					
7 US Corporate Bonds - High Yield	5.36%	4.90%	6.14%	5.62%	9.75%	0.63	0.62	0.62	0.62	0.38	0.32	1.00				
8 Non-US Debt - Developed	1.58%	1.39%	2.53%	2.26%	7.02%	0.12	0.06	0.28	0.23	0.53	0.49	0.24	1.00			
9 Non-US Debt - Emerging	5.76%	5.16%	6.54%	5.85%	10.97%	0.48	0.44	0.52	0.62	0.44	0.36	0.62	0.41	1.00		
10 US Treasuries (Cash Equivalents)	1.59%	1.56%	2.28%	2.25%	1.78%	(0.08)	(0.08)	(0.07)	(0.06)	0.23	0.17	(0.08)	0.21	0.06	1.00	
11 TIPS (Inflation-Protected)	2.16%	1.98%	2.94%	2.73%	6.05%	0.05	0.02	0.09	0.13	0.67	0.54	0.27	0.45	0.36	0.22	1.00
12 Real Estate	7.15%	5.75%	7.91%	6.59%	16.84%	0.53	0.55	0.49	0.44	0.22	0.18	0.46	0.19	0.36	(0.01)	0.17
13 Hedge Funds	5.08%	4.74%	6.10%	5.71%	8.00%	0.63	0.61	0.63	0.61	0.15	0.11	0.53	0.13	0.43	(0.06)	0.10
14 Commodities	4.70%	3.19%	5.60%	4.04%	17.60%	0.31	0.30	0.39	0.42	0.08	0.01	0.35	0.21	0.30	0.03	0.22
15 Infrastructure	7.97%	6.94%	8.45%	7.30%	14.58%	0.53	0.50	0.56	0.51	0.25	0.25	0.53	0.28	0.45	(0.02)	0.20
16 Private Equity	11.42%	9.08%	12.54%	9.87%	21.99%	0.73	0.71	0.67	0.59	0.04	0.04	0.51	0.07	0.36	(0.06)	0.01
17 Private Debt	8.50%	7.75%	8.63%	7.85%	12.06%	0.57	0.57	0.53	0.52	0.11	0.10	0.73	0.01	0.40	(0.09)	0.08
Inflation	1.98%	1.97%	2.17%	2.16%	1.70%											

*The investment consultant has adopted the published Horizon Survey of Capital Market Assumptions for 2020.

13. How is this risk measured and how are the expected rates of return determined? What is the time horizon?

Risk is measured by several metrics including standard deviation, greatest historical loss, maximum drawdown, worst historical periods, value at risk, and exposure to loss probability. Expected rates of returns are determined for the asset classes by evaluation of the published JP Morgan's capital market assumptions and evaluation of the published Horizon survey of capital market assumptions. All stats measured over a variety of time periods. The time horizon for asset allocation studies is 10-30 years.

14. What mix of assets is necessary to achieve the plan's investment return and risk objectives?

Based on the 2019 and 2020 capital market assumptions and asset allocation study, the target return was not achievable given the model constraints. This study has caused the Board to actively explore a reduction in the assumed rate of return with the actuary.

15. What consideration is given to active vs. passive management?

25% of plan assets are passively managed.

16. Is the approach used by the system to formulate asset allocation strategies sound, consistent with best practices, and does it result in a well-diversified portfolio?

- ☒ Yes
☐ No
☐ OFI



17. How often are the strategic and tactical allocations reviewed?

The Board's practice is to review the strategic asset allocation every three-to-five years; or more frequently if warranted as necessary. There is no tactical asset allocation.

(C) the appropriateness of selection and valuation methodologies of alternative and illiquid assets; and

18. How are alternative and illiquid assets selected, measured and evaluated?

The Board has evaluated the attributes of alternative asset classes in its asset allocation studies. Once an asset class has been identified for potential investment, a separate review of that segment is then reviewed including asset managers. The Board utilizes the investment manager research capability of its investment consultant when identifying asset manager candidates. The Board has 10% allocation to commercial real estate through commingled funds. Specific considerations for selection of this allocation were based on the yield advantage over traditional fixed income and low correlation when compared to most other risk assets. Real estate was also identified as an alternative with transparency, a redemption mechanism, and low relative fees. The real estate managers were evaluated relative to other candidates and the Board selected firms based on their presentations. The real estate managers' performances are measured against the NCREIF ODCE benchmark and the Wilshire Universe of real estate managers. There are no other "alternative" or illiquid strategies.

19. Are the system's alternative investments appropriate given its size and level of investment expertise?

- ☒ Yes
- ☐ No
- ☐ OFI

19a. Does the IPS outline the specific types of alternative and illiquid investments allowed, as well as the maximum allocation allowable?

- ☒ Yes
- ☐ No
- ☐ OFI

There are permissible ranges for all asset classes. See 2.b.11 above.

20. What valuation methodologies are used to measure alternative and illiquid assets? What alternative valuation methodologies exist and what makes the chosen method most appropriate?

See answer to question See2.b.18. Real estate managers use property appraisals/marked-to-market methodologies for the value of underlying fund investments to determine the NAV. Each underlying property is valued quarterly with a third-party appraisal no less than 1x per year. There are no alternative valuation methods required.



(D) future cash flow and liquidity needs;

21. What are the plan's anticipated future cash flow and liquidity needs? Is this based on an open or closed group projection?

Based on the most recent actuarial experience study, the fund will experience consistent liquidity needs/outflows for the next 10+ years. The Board is working with the plan sponsor on a variety of funding solutions. The Board has chosen not to conduct a formal asset-liability study which would consider an open/closed group projection.

22. When was the last time an asset-liability study was performed?

The Board has chosen not to do an asset-liability study due to the expense involved in this evaluation.

23. How are system-specific issues incorporated in the asset allocation process? What is the current funded status of the plan and what impact does it have? What changes should be considered when the plan is severely underfunded, approaching full funding, or in a surplus? How does the difference between expected short-term inflows (contributions, dividends, interest, etc.) and outflows (distributions and expenses) impact the allocation? How does the underlying nature of the liabilities impact the allocation (e.g. pay-based vs. flat \$ benefit, automatic COLAs, DROP, etc.)?

The Plan is severely underfunded. The Board is working diligently to identify funding solutions. In 2020, the Board and actuary adjusted the member/city contribution rates. Expanded fire services will bring in new members to improve cash flow demographics in the near-to-intermediate term. Changes in asset allocation to be considered will include moving towards a more conservative asset mix. Prior to and following the 2020 asset allocation study, the Plan set a policy of meeting its monthly outflows predominately from equity managers in order to shift the asset towards a more conservative risk posture. This policy has reduced risk assets over the past two years, resulting in the fixed income allocation increasing from 17% of Plan assets (9/30/18) to 22% of plan assets (6/30/20). The nature/type of liabilities has not impacted the allocation. The plan considers the annual net cash flows verses the nature of liability types.

24. What types of stress testing are incorporated in the process?

The asset allocation is stress tested using a monte-carlo simulation that tests the portfolio for best / worst outcomes and most-likely scenarios over long-term time horizons. The Plans allocation modeling also evaluates value at risk measured at different probabilities and at the end of an investment horizon. Continuous value at risk also measures the worst outcome from inception to any point throughout an investment horizon. The Board's studies have also evaluated best and worst outcomes and largest drawdowns of the policy throughout history. The Plan's cash flow and liquidity needs are considered when evaluating these stress texts in determining the asset allocation.



(3) a review of the appropriateness of investment fees and commissions paid by the retirement system;

1. Do the system's policies describe the management and monitoring of direct and indirect compensation paid to investment managers and other service providers?

- ☐ Yes
☐ No
☒ OFI

There is a robust policy and practice of measuring and monitoring all fees/compensation consistent with PRB guidance. However, there is no formal/written policy for doing so. We have recommended that the 2021 IPS include the current practice on fee measurement/disclosure.

- 1a. What direct and indirect investment fees and commissions are paid by the system?

The indirect fees paid to asset managers is 44 basis points. The direct fees paid to asset managers are 7 basis points. The direct fees paid to investment-related service providers (custody / investment consulting) are 14 basis points. Total direct fees are 21 basis points. Total compensation (fees) paid (direct and indirect) by the system are approximately 65 basis points. Note: as of 6/30/20.

2. Who is responsible for monitoring and reporting fees to the Board?

The Board is responsible for the overall governance of the Plan. The monitoring and reporting of fees to the Board has been accomplished quarterly by the investment consultant.

- 2a. Is this responsibility clearly defined in the system's investment policies?

- ☐ Yes
☐ No
☒ OFI

The Plan intends to update their investment policy document to include the criteria and responsibilities for reporting fees.



3. Are all forms of manager compensation included in reported fees?

☒ Yes

☐ No

☐ OFI

All investment manager compensation for mutual funds is disclosed in the fund's prospectus. All investment manager compensation is stated in the investment manager contracts. The investment consultant provides comprehensive fee analysis to the Board quarterly.

4. How do these fees compare to peer group and industry averages for similar services?

Based on the PRB's comparison of fees for TELFRA plans, SEAS found the Plan's investment fees at the Total Fund level to be reasonable. The Incumbent and target asset manager fees are evaluated relative to industry peer groups as reported by eVestment Alliance and Morningstar. A summary current asset managers and fees is listed below:

Asset Manager	Expense Ratio / Manager Fee	Category Average
Blackrock Equity Dividend Fund	71 bp	72
Schwab Total Market Index	3 bp	85
T. Rowe Price New America	78 bp	85
Vanguard Small Cap Index	5 bp	97
American Fund EuroPacific Fund	49 bp	77
AMG Yacktman Fund	75 bp	72
Dodge & Cox Income	42 bp	58
Double Line Core Fixed Income	48 bp	48
PIMCO Investment Grade	50 bp	55
PIMCO Diversified Income	75 bp	67
PIMCO Income Fund	50 bp	67
American Realty	125 bp	NA
TA Realty	70 bp	NA

**Category average shown above is sourced from Morningstar.*

4a. How are the fee benchmarks determined?

Manager fees are benchmarked against median published fees for each asset class. See table in answer 4 above.



5. Does the system have appropriate policies and procedures in place to account for and control investment expenses and other asset management fees?

☒ Yes
☐ No
☐ OFI

We found the Board's practice of quarterly review of investment fees and expenses to be rigorous.

6. What other fees are incurred by the system that are not directly related to the management of the portfolio?

Actuarial, Administrative and legal expenses, continuing education including TEXPERS and TLFFRA and other conference expenses.

7. How often are the fees reviewed for reasonableness?

The Plan has a practice of reviewing all investment-related plan fees quarterly.

8. Is an attorney reviewing any investment fee arrangements for alternative investments?

All investment manager agreements (which include fee arrangements) are reviewed by the Plan's attorney.

(4) a review of the retirement system 's governance processes related to investment activities, including investment decision-making processes, delegation of investment authority, and Board investment expertise and education.

Transparency

1. Does the system have a written governance policy statement outlining the governance structure? Is it a stand-alone document or part of the IPS?

☐ Yes
☒ No
☒ OFI

While governance for investment functions are outlined in the funds IPS and follow the TLFFRA statute guidelines, the Plan does not have a stand-alone governance policy. We have recommended that the Plan document/Plan charter explain the governance structure of the Board.



2. Are all investment-related policy statements easily accessible by the plan members and the public (E.g. posted to system website)?

- ☒ Yes
☐ No
☐ OFI

Plan members have immediate access to yearly investment reports such as the current investment policy, performance report, audit and actuarial valuations. All documents are held electronically at the pension office and are readily available upon request. There is no public website.

3. How often are Board meetings? What are the primary topics of discussion? How much time, detail, and discussion are devoted to investment issues?

As required by TLFFRA there is at least one regular Board meeting a month. Topics in discussion range depending on what issues or actions need to be taken that month. An appropriate amount of time, detail, and discussion are devoted to investment issues. If it is a new investment issue or one that will take a significant amount of time a special meeting may be called to address that topic only.

4. Are meeting agendas and minutes available to the public? How detailed are the minutes?

- ☒ Yes
☐ No

Agendas are posted publicly before the required 72 hour posting time to be in compliance with the Open Meetings Act. Minutes are available by request and adequately portray the actions of the Board. The minutes are sufficiently detailed.

Investment Knowledge/Expertise

5. What are the backgrounds of the Board members? Are there any investment-related educational requirements for Board members?

As outlined by TLFFRA there are three firefighter members, two members from the public, a mayoral appointee, and an appointee by the director of finance from the City of Odessa. One of the public citizens is a private retirement investment officer with Raymond James, the finance appointee is the city controller, the mayoral appointee is the at large city council position who is a private CPA, and one of the firefighter members has a degree in economics.

6. What training is provided and/or required of new Board members? How frequently are Board members provided investment-related education?

The Board follows the PRB's MET requirements. In the first year on the Board, trustees complete a minimum of seven hours of core training within one year from their service start date. In subsequent years, trustees complete four hours of non-core training. OFRRF is a member of the TLFFRA conference foundation, TEXPERS, NCPERS, and FPPTA. Any Board member can attend conferences or take online accredited classes through those organizations or the PRB.



7. What are the minimum ethics, governance, and investment education requirements? Have all Board members satisfied these minimum requirements?

In the first year of serving at least half an hour is required in each topic listed. All members are currently up to date on their MET.

8. Does the system apply adequate policies and/or procedures to help ensure that all Board members understand their fiduciary responsibilities?

Trustees are required to sign an oath of office when they first start their term and each time they are renewed. Fiduciary responsibility is covered at most conferences and through PRB online classes. The firefighter members attended a conference in May of 2019 and learned more about the importance of fiduciary roles and responsibilities. We had our fund attorney, Kim Wilkerson, present at the next available Board meeting, June 27, 2019, to discuss what it means to be a fiduciary and its importance.

9. What is the investment management model (i.e. internal vs. external investment managers)?

The Plan uses only external investment managers.

10. Does the Board receive impartial investment advice and guidance?

Yes. The investment consultant is independent and only advises the Board. The investment consultant is not affiliated with any investment manager.

11. How frequently is an RFP issued for investment consultant

As needed. When a consultant is failing or not up to par the Board will approach the consultant with their concerns and work with them to achieve a better result. If the outcome isn't what is required, then an RFP will be issued. We have recommended that the plan document include the policy and frequency for reviewing all vendors.

Accountability

12. How is the leadership of the Board and committee(s), if any, selected?

The chairman position is rotated throughout the three firefighter members every year for a term of one-year. The vice-chairman and secretary positions are available to the rest of the Board every year for a term of one-year.



13. Who is responsible for making decisions regarding investments, including manager selection and asset allocation? How is authority allocated between the full Board, a portion of the Board (e.g. an investment committee), and internal staff members and/or outside consultants?

The full Board is responsible for making any changes in investment managers, their selection and asset allocation. As long as a quorum is present an investment decision may be made. However, the Board will be presented investment information more than once so that the full Board has knowledge of, and can deliberate over, any decision to be made. Internal staff and investment consultants have the authority, directed by the Board, to handle day to day operations such as re-allocation, to raise cash, or payment of fees to asset managers. Only internal staff can direct investment managers or the custodian. The investment consultant does not have discretion over the assets and does not have the power to direct the custodian or asset managers.

13a. Does the IPS clearly outline this information?

- ☒ Yes
- ☐ No
- ☐ OFI

The IPS is the adopted by vote of the full Board and the communicates clearly the Board's decisions regarding investments, manager selection and asset allocation.

13b. Is the Board consistent in its use of this structure/delegation of authority?

- ☒ Yes
- ☐ No
- ☐ OFI

The Board has demonstrated consistency in its structure and delegation of authority.

14. Does the system have policies in place to review the effectiveness of its investment program, including the roles of the Board, internal staff and outside consultants?

- ☒ Yes
- ☐ No
- ☐ OFI

The Board follows the current investment consultant's system for reviewing performance of each investment manager. The Board reviews quarterly reports from the consultant to determine if the current program is where it should be and if all persons involved are doing as they should be.

15. Is the current governance structure striking a good balance between risk and efficiency?

- ☒ Yes
- ☐ No
- ☐ OFI

Based on our assessment, the Board structure and governance is efficient and effective.



16. What controls are in place to ensure policies are being followed?

The Plan is evaluated by an independent auditor annually and has an actuarial valuation performed annually. The IPS clearly states the investment guidelines that all asset managers, consultant, and the Board are to follow. The Board consults with its attorney when issues regarding policy arise to make sure those are being followed as well. The TLFRA statute is commonly referenced.

17. How is overall portfolio performance monitored by the Board?

The Board relies on the investment consultant to report and monitor on portfolio performance.

18. How often are the investment governance processes reviewed for continued appropriateness?

As needed and when any new change is made with the investments or processes required.

(5) A review of the retirement system's investment manager selection and monitoring process.

1. Who is responsible for selecting investment managers?

The Board of Trustees is responsible for selecting investment managers with assistance by the investment consultant.

2. How are the managers identified as potential candidates?

Asset manager candidates are sourced by the investment consultant through quantitative and qualitative screens and research. After a review of potential candidates, the Board chooses a shortlist of managers for interview/selection.

3. What are the selection criteria for including potential candidates?

The investment consultant uses a multitude of criteria, statistics and benchmarks specific to each assignment during the manager research process. The manager candidate must have shown superior risk-adjusted performance in the past over a variety of investment environments. The manager must demonstrate that their process is repeatable.

4. What are the selection criteria when deciding between multiple candidates?

The Board decides between candidates based on the data presented and the presentations of the investment manager representatives. Investment manager candidates have been given 30 minutes to present to the Board with additional time allotted for questions. The Board believes strongly in the importance of selecting asset managers with low management fees.



5. How does the selection process address ethical considerations and potential conflicts of interest for both investment managers and Board members?

☒ OFI

The Board's past RPFs for asset managers and investment related vendors specifically require the disclosure of ethical or other potential conflicts of interest. The Consultant's research identifies asset manager candidates based solely on their merits in a conflict-free process. If there is any potential conflict of interest with investment managers, the Board members will abstain from voting per their oath of office.

The Board's oath of office requires members to "solemnly swear to diligently and honestly administer the affairs of the Texas Local Fire Fighters' Retirement Act of (city), Texas and will not knowingly violate or willingly permit to be violated any provision of said Act (Reference Section 18)." If at any time a board member reveals to the Board or is found to have a conflict of interest in a Board matter, that member is required to abstain from any vote regarding that matter.

While there is a constructive practice in place, there is no formal policy for ethical matters specifically in the area of manager selection. We have recommended that the Board include minimum requirements for the consideration of investment managers and ethical considerations in the 2021 IPS.

6. Who is responsible for developing and/or reviewing investment consultant and/or manager contracts?

The Board and its attorney are responsible for the review of all contracts.

7. What is the process for monitoring individual and overall fund performance?

Investment performance is monitored by the Board no less than quarterly through a virtual or in-person review with the investment consultant. The investment consultant measures the total fund and individual components of the portfolio over trailing time periods. The monitoring process includes measurement and assessment of risk over 3-year and 5-year periods relative to standard deviation and the Wilshire public fund Universe. Asset managers are evaluated on a multitude of specific metrics in determining their effectiveness and the risk taken in their individual portfolios.

8. Who is responsible for measuring the performance?

The investment consultant calculates performance using statements provided by the custodian. These are provided to the Board quarterly through a customized performance measurement report.



9. What benchmarks are used to evaluate performance?

The total plan has a custom target index reflecting the overall asset allocation strategy. Individual asset managers are benched to the following:

Asset Manager	Policy Benchmark	Comparative Universe
Blackrock Equity Dividend Fund	Russell 1000 Value Index	Large Cap Value Universe
Schwab Total Market Index	Russell 1000	Large Cap Universe
T. Rowe Price New America	Russell 1000 Growth Index	Large Cap Growth Universe
Vanguard Small Cap Index	Russell 2000 Index	Small Cap Value Universe
American Fund EuroPacific Fund	MSCI EAFE Index	International Equity Universe
AMG Yacktman Fund	CPI+4% / R1000 Value	ASR Equity / Large Cap Value
Dodge & Cox Income	Bloomberg Barclays US Aggregate Bond Index	Core Domestic Fixed Income Universe
Double Line Core Fixed Income	Bloomberg Barclays US Aggregate Bond Index	Core Domestic Fixed Income Universe
PIMCO Investment Grade	Bloomberg Barclays US Credit Index	Investment Grade Fixed Income Universe
PIMCO Diversified Income	Bloomberg Barclays US Aggregate Index	Multi-Sector Fixed Income Universe
PIMCO Income Fund	Bloomberg Barclays US Aggregate Index	Multi-Sector Fixed Income Universe
American Realty	NCREIF ODCE	Domestic Real Estate Universe
TA Realty	NCREIF ODCE	Domestic Real Estate Universe
Absolute Return Manager(s) - TBD	CPI + 4%	N/A

Revised: February 27, 2020

10. What types of performance evaluation reports are provided to the Board? Are they provided in a digestible format accessible to trustees with differing levels of investment knowledge/expertise?

The Board receives quarterly performance reporting from the investment consultant. The reporting is customizable, easily digestible and based on the Wilshire reporting platform. The investment consultant is on a retainer fee arrangement and is available to the Board to provide research on any investment-related investment topic at no additional cost.

11. How frequently is net-of-fee and gross-of-fee investment manager performance reviewed?

Net-of-fee and gross-of-fee manager performance is evaluated quarterly.

11a. Is net-of-fee and gross-of-fee manager performance compared against benchmarks and/or peers?

The Plan uses mutual fund structure for its public equity and fixed income allocations. All mutual fund performance is measured net-of-fees and compared to benchmarks and universes that are gross-of-fees. This provides a more stringent comparison. The Plan also evaluates the mutual fund managers' gross-of-fee performance by adding the indirect fees to its rolling performance returns. Real estate manager returns are compared gross-of-fees and their benchmarks and universes are also evaluated gross-of-fees. Real estate manager net-of-fee returns are also calculated and reported quarterly.



12. What is the process for determining when an investment manager should be replaced?

There is a formal process within the IPS for putting managers “under review” and subsequent replacement based on performance. Asset managers are expected to meet or exceed the performance criteria over a three-to-five-year time period. The Plan may also consider qualitative issues that are manager specific that may cause the manager to be placed “under review” or replaced.

13. How is individual performance evaluation integrated with other investment decisions such as asset allocation and investment risk decisions?

Individual asset manager performance evaluation is separate and unique from asset allocation/risk decisions at the plan level. The plan level evaluation includes attribution analysis to identify the specific sources of performance. The evaluation process of each underlying manager includes the consideration of their specific risk-adjusted return statistics. If a specific investment manager is performing well on an absolute basis but is deemed to be taking too much risk to achieve the performance, the Board may allocate away from or terminate that manager.



ODESSA FIREFIGHTERS' RELIEF & RETIREMENT FUND

STATEMENT OF INVESTMENT POLICY GOALS AND GUIDELINES

Adopted: February 27, 2020

PURPOSE

The purpose of the Odessa Firefighters' Relief & Retirement Fund (the "Fund") is to provide long-term retirement benefits to the Plan's participants. The purpose of this document is to communicate, in writing, the investment objectives and guidelines established by the Board of Trustees of the Odessa Firefighters' Relief & Retirement Fund. It is further intended to provide a clear and accurate understanding of all investment objectives, investment guidelines and the criteria by which investment performance will be evaluated.

The investment policies set forth in this document were established after a thorough review of the unique needs and circumstances of the Fund and a careful evaluation of the risk and potential returns expected from various mixes of risk assets including stocks, bonds, alternative strategies and cash equivalent securities.

GENERAL OBJECTIVES

The investment objective of the Odessa Firefighters' Relief & Retirement Fund is to preserve the purchasing power of the Plan's assets and to earn a competitive real rate of return (after inflation); while over the long-term minimizing, to a reasonable extent, volatility of results. To achieve these objectives, the Board of Trustees seeks to create a diversified and balanced portfolio of assets managed in separate account, mutual fund, commingled fund, and/or limited partnership vehicles.

INVESTMENT MANAGER RESPONSIBILITIES

1. Within the guidelines and restrictions set forth herein, it is the intention of the Board of Trustees to give each investment manager full investment discretion with respect to assets under its management.
2. The investment managers shall discharge their responsibilities in the same manner as if the Fund were governed by the fiduciary responsibility provisions of the Employee Retirement Income Security Act of 1974 (ERISA). Although the Board acknowledges that ERISA does not apply to the Fund as a governmental fund, it hereby imposes the fiduciary provisions of ERISA upon each investment manager whose performance shall conform to the statutory provisions, rules, regulations, interpretations and case law of ERISA. The Board will request that each separate account investment manager shall acknowledge, in writing, that it is a named fiduciary of the Fund.
3. Each investment manager utilizing separate account, commingled or limited partnership structure is expected to provide any reasonable information requested by the Board of Trustees. As a minimum requirement, these managers shall provide a quarterly report detailing their investment activity, the portfolio's current value and any changes in investment philosophy or strategy. This report shall also identify and describe any significant changes in the personnel or ownership of the investment management firm. Each investment manager is expected to meet with the Board of Trustees or their designated representatives periodically to review investment performance and philosophy.
4. Unless otherwise provided by the Plan's Custodian, each investment manager will manage portfolio activity to minimize un-invested cash balances.
5. Each investment manager shall be responsible only for those assets under their management.
6. It will be the responsibility of each separate account investment manager to review the monthly valuations provided by the Fund's custodian and to note, in writing, any significant discrepancies from the valuations provided in their own reports.
7. The Board acknowledges that mutual fund investments selected by the Board and purchased by the Fund's custodian are governed by each funds' prospectus and that no additional requirements may be placed on these investments. Direct investments in mutual funds are not subject to the investment management responsibilities enumerated above.

INVESTMENT OBJECTIVES

Given the purpose of the Odessa Firefighters' Relief & Retirement Fund stated above, the Board of Trustees recognizes the necessity of a long-term horizon when formulating investment policies and strategies. However, shorter-term investment goals have been established and are intended to provide quantifiable benchmarks to measure and evaluate portfolio return and risk.

Most investment styles require a full market cycle to allow an investment manager to demonstrate his abilities. As most market cycles last from three to five years, performance results will be measured over a three to five-year period. Performance over shorter time periods will be monitored as a means of identifying the trend of results.

The specific investment objectives of the Odessa Firefighters' Relief & Retirement Fund are as follows:

Absolute Return Objective: To achieve an average annual rate of return greater than **7.50%** over the longer-term. This absolute return objective will be evaluated in the context of the prevailing investment market conditions.

Target Return Objective: To earn a total rate of return over the longer term, which exceeds the return of a Target Index. The Target Index for the Odessa Firefighters' Relief & Retirement Fund is defined as a **45%** investment in the Russell 1000 Stock Index, a **10%** in the Russell 2500, a **10%** investment in the Europe Australasia and Far East (EAFE) Stock Index, a **10%** investment in the NCREIF ODCE Property Index and a **25%** investment in the Bloomberg Barclays Capital Aggregate Bond Index.

Peer Return Objective: In addition, it is expected that the rate of return earned by the Fund will rank **above-average** when compared to a representative universe of other, similarly managed portfolios.

Volatility: The Board of Trustees has identified standard deviation as the most appropriate measure of risk. The volatility of the total Fund's total returns is expected to be similar to that of the Target Index and will be evaluated accordingly.

The above investment objectives have been established for the entire Odessa Firefighters' Relief & Retirement Fund. Individual asset managers (in separate account or fund structure) will be given specific benchmarks that correspond to their direct mandate and asset class in Exhibit A.

INVESTMENT GUIDELINES

The Board of Trustees has established the following target asset allocation for the entire Odessa Firefighters' Relief & Retirement Fund.

	<u>Target Allocation (at market)</u>	<u>Permissible Range (at market)</u>	<u>Representative Benchmark</u>
Global Equity:			
Large Cap Domestic Equity	45%	35% – 55%	Russell Benchmarks
Small & Mid Cap Domestic Equity	10%	5% - 15%	Russell Benchmarks
International Equity	10%	5% - 25%	MSCI Benchmarks
<i>Total Equity</i>	<i>65%</i>	<i>70% Max Limit</i>	
Fixed Income, Alts & Yield-based Strategies:			
Fixed Income	25%	20% - 30%	Bloomberg Barclays Benchmarks
Real Estate	10%	5% - 20%	NCEIF Benchmarks
Absolute Return	0%	0% - 20%	CPI+4%
Cash Equivalents	0%	0% - 10%	T-bills

REBALANCING:

It is the Board's intention to allocate the assets similarly to the Target Index but understands that the assets will fluctuate over time based to normal market action. In order to control risk, the permissible ranges above have been identified as a tool to assist in rebalancing the total portfolio. The Board of Trustees intend to review and rebalance the portfolio periodically. From time to time, if any asset class fall outside its permissible range the Board of Trustees does not consider this a technical default of the Investment Policy.

Specific investment manager assignments within broad asset classes including specific benchmarks are reflected in Exhibit A.

The aggregate portfolio of assets in each asset class listed below should, in aggregate, comply with these guidelines:

EQUITY PORTFOLIO:

- 1) Investments in equity securities or funds representing equity participation that are benchmarked to corresponding equity indices shall be not exceed **70%** at market value of the total investment portfolio.
- 2) Investment in equity securities shall be limited to easily and readily negotiable securities, registered mutual funds or commingled funds.
- 3) Investments in foreign securities and funds representing foreign equity participation shall be limited to **25%** (at market) of the total investment portfolio. The Board may achieve diversification in foreign equity through commingled fund or institutional mutual fund vehicles. These pooled investments are considered an investment in foreign securities.
 - a) American Depositary Receipts (ADRs) and foreign ordinary securities traded on domestic exchanges are United States dollar-denominated securities listed and traded on a United States exchange and are considered part of the ordinary investment strategy of the Board. These securities are not considered foreign securities and may be purchased by separate account managers without limitation.
- 4) Exchange traded funds (ETFs) and exchange traded notes (ETNs) are permissible within separate account portfolios, mutual funds or commingled vehicles.
- 5) For separate account portfolios, investment in those corporations whose stock has been publicly traded for less than one year are limited to **15%** of the equity portfolio.

FIXED INCOME PORTFOLIO:

- 1) No more than **5%** of the composite fixed income portfolio (individual bonds and funds representing fixed income participation combined) shall be invested in the securities of any single corporate issuer.
- 2) The duration of the composite fixed income portfolio, including individual bonds and funds representing fixed income participation, should be less than **135%** of the duration of the market index. The market index is defined as the Bloomberg Barclays Aggregate Bond Index.
- 3) Direct investment in collateralized Mortgage Obligations (CMOs) by separate account portfolio managers shall be limited to **15%** of the market value of their portfolio. There is no limitation on CMOs within a mutual fund or commingled fund structure.
- 4) Futures contracts and shorts may be utilized for diversification, duration adjustment, and/or yield curve positioning purposes.
- 5) There is no limit imposed on investments in fixed income securities issued directly by the United States Government or any agency or instrumentality thereof.

REAL ESTATE:

- 1) Investments in real estate shall not exceed **20%** of the value of total fund assets at market valuation.
- 2) All real estate investments shall be made through participation in diversified commingled funds of real properties. These funds shall be broadly diversified as to property type and location.
- 3) Experienced and professional real property investment managers shall manage all real estate investments.

ABSOLUTE RETURN / ALTERNATIVE ASSET PORTFOLIO:

- 1) Investments in absolute or alternative strategies shall not exceed **20%** of the value of total fund assets at market valuation.
- 2) All absolute return or alternative investments shall be made through participation in diversified commingled funds, mutual fund or limited partnership vehicles.
- 3) The Board considers absolute return as those strategies with a stable and consistent return expectation that are not tied to any asset class or benchmark. These strategies may include but not be limited to hedge fund, tactical asset allocation, or hybrid securities (convertible/preferred). The Board of Trustees shall endeavor to consider those investments that offer liquidity, transparency and low relative fees.

CASH EQUIVALENT SECURITIES/FUNDS:

- 1) The investment managers may invest only in the following short-term investment vehicles:
 - a) The money market or short-term investment fund (STIF) provided by the Fund's custodian.
 - b) Direct obligations of the United States Government, its agencies or instruments with a maturity of one year or less.
 - c) Commercial Paper issued by United States corporations which has a maturity of 270 days or less and that is rated A-1 by Standard & Poor's or P-1 by Moodys rating services.
 - d) Bankers Acceptances and Certificates of Deposit issued by the largest 50 banks in the United States (in terms of total assets).

PROHIBITED SECURITIES:

Only those derivative securities expressly described herein are permissible.

MUTUAL FUNDS / COMMINGLED FUNDS:

The Board of Trustees recognizes and accepts that commingled and mutual fund investments are governed by the investment policies and guidelines of those funds and that no additional constraints may be imposed on them. The decision to invest Fund assets in any commingled or mutual fund will only be made by the Board of Trustees after a thorough review of the policies and/or prospectuses of those funds and after it has been determined that those policies are appropriate and consistent with the Board's investment objectives. The Board of Trustees implicitly accepts the policy of a mutual fund or commingled fund when it makes a direct investment.

RISK AND VOLATILITY:

The Board of Trustees intend to assume a reasonable level of risk given the Fund's target return and near-term liquidity needs. Risk of the total Fund, the composite asset classes, and each individual asset manager is to be measured by the standard deviation of returns. The standard deviation of the total Fund is to be compared to other defined benefit pension plans as measured by applicable peer universe(s). The standard deviation of the composite equity portfolio will be compared to the standard deviation of the equity portfolios of other defined benefit plan sponsors in the peer universe. The standard deviation of the composite fixed income portfolio will be compared to the standard deviation of returns of fixed income portfolios of other defined benefit plan sponsors in the peer universe. The standard deviation of real estate managers and alternative strategies is will be compared to the standard deviation of applicable universe comparisons (when available). The standard deviation of each asset manager or mutual fund will be independently measured against the volatility of their direct peer group (when available).

REVIEW & FILING REQUIREMENTS

It is the intention of the Board of Trustees to review this Statement of Investment Policy periodically and to amend it to reflect any changes in philosophy or objectives. A copy of this document should be filed with the State Pension Review Board not later than the 90th day after the date the Policy is adopted. The current address of the SPRB is 300 W. 15th Street, Suite 406, Austin, Texas 78701.

Adopted this 27th day of February, 2020.



Board of Trustees
Odessa Firefighters' Relief
& Retirement Fund

February 28, 2020

Date

Exhibit A

Actively managed strategies / funds are expected to meet or exceed the stated policy benchmark and to rank above-average to its comparative universe over a three to five-year period. Passive investments are expected to replicate their respective benchmarks and will be ranked against comparative universes for informational purposes. Passive funds are not expected to rank above average -v- a sample of active managers. The Board of Trustees will place an actively managed strategy "under review" if these performance expectations are not met over a 3-5-year period. The Board of Trustees may place an actively managed strategy "under review" if the standard deviation of returns is considered inappropriate based on the unique characteristics of each strategy.

Asset Manager	Policy Benchmark	Comparative Universe
Blackrock Equity Dividend Fund	Russell 1000 Value Index	Large Cap Value Universe
Schwab Total Market Index	Russell 1000	Large Cap Universe
T. Rowe Price New America	Russell 1000 Growth Index	Large Cap Growth Universe
Vanguard Small Cap Index	Russell 2000 Index	Small Cap Value Universe
American Fund EuroPacific Fund	MSCI EAFE Index	International Equity Universe
AMG Yacktmann Fund	CPI+4%	Absolute Return Equity Strategy - N/A
Dodge & Cox Income	Bloomberg Barclays Aggregate Index	Core Domestic Fixed Income Universe
Double Line Core Fixed Income	Bloomberg Barclays Aggregate Index	Core Domestic Fixed Income Universe
PIMCO Investment Grade	Bloomberg Barclays Corporate Index	Investment Grade Fixed Income Universe
PIMCO Diversified Income	Bloomberg Barclays Aggregate Index	Multi-Sector Fixed Income Universe
PIMCO Income Fund	Bloomberg Barclays Aggregate Index	Multi-Sector Fixed Income Universe
American Realty	NCREIF ODCE	Domestic Real Estate Universe
TA Realty	NCREIF ODCE	Domestic Real Estate Universe
Absolute Return Manager(s) - TBD	CPI + 4%	N/A

Revised: February 27, 2020

ODESSA FIREFIGHTERS' RELIEF & RETIREMENT FUND
INVESTMENT PERFORMANCE ANALYSIS
SECOND QUARTER 2020

Note: For a copy of Southeastern Advisory Services, Inc.'s most recent Form ADV Brochure Part 2A, please write: Southeastern Advisory Services, Inc., 3495 Piedmont Road NE, Bldg. 12-202, Atlanta, GA 30305, or e-mail your request to ben@seadvisory.com. Form ADV Brochure Part 2A will be mailed within seven (7) days upon receipt of the request.

Jeffrey D. Swanson, Senior Consultant

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Twelve Piedmont Center, Suite 202
Atlanta, Georgia 30305
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FAX: (404) 237-2650

ODESSA FIREFIGHTERS' RELIEF & RETIREMENT FUND

INVESTMENT PERFORMANCE ANALYSIS

JUNE 30, 2020

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Executive Summary

ODESSA FIREFIGHTERS' RELIEF & RETIREMENT FUND

Quarter Ending June 30, 2020

I. MARKET ENVIRONMENT

Index	Second Quarter	1 Year	3 Year
Standard & Poor's 500 Index	20.5%	7.5%	10.7%
Russell 2000 Index	25.4%	-6.6%	2.0%
MSCI EAFE Index (Net)	14.9%	-5.1%	0.8%
NCREIF Property Index	-1.0%	2.7%	5.4%
CS Hedge Index	6.2%	-0.7%	2.1%
BbgBarc U.S. Aggregate	2.9%	8.7%	5.3%
91 Day Treasury Bills	0.0%	1.6%	1.8%
Consumer Price Index (NSA)	-0.1%	0.6%	1.7%

Global markets negatively impacted by the economic implications of the Coronavirus in the first quarter delivered a strong rebound with all asset class enjoying a strong rebound during the second quarter. According to a report by the Federal Reserve Bank of Philadelphia, expectations for real GDP growth this year are approximately -5% with an unemployment rate remaining above 10%. Real GDP was down -5.0% during the first quarter of 2020 as restricted activity due to the Coronavirus weighed heavily on economic growth. The main detractor was personal consumption, the largest component of GDP, which was down -6.8% for the quarter. Business spending was down -6.4% on lower fixed investment and the largest inventory drawdown since 2009. Economists are currently forecasting a much larger, double-digit fall in Real GDP for the second quarter.

Equities: The combination of unprecedented government stimulus, followed by recent economic data led the Standard & Poor's 500 to gains of 20.5% for the second quarter of 2020, the best quarter in 45 years. Although rebounding strongly, equities are still down for the year - 3.3%. All eleven major sectors were in positive territory while the best performing sector was Consumer Discretionary (+37.1%), followed closely by Energy (+32.6%) and Technology (+31.6%).

Fixed Income: The U.S. Treasury yield curve was little changed during the quarter after a dramatic drop in Q1. Although the entire curve is below 1.5% it also is steeper than it has been in two years. The 10-year Treasury yield ended the quarter at .66%, down just .04% from March. The Federal Open Market Committee met twice during the quarter, as scheduled, with no change to their overnight rate, which they expect will be near zero until at least 2022. Chair Jerome Powell attempted to temper expectations by stating that, "The path forward for the economy is extraordinarily uncertain." Credit spreads tightened significantly during the quarter, as evidenced by the double-digit return within the high yield market.

Alternatives: Total hedge fund assets surged in 2020 as the HFRI Fund Weighted Composite Index posted the strongest quarterly performance gain since 2009. Total capital invested in hedge funds increased to \$3.177 trillion, a record quarterly increase of \$220 billion. Investor outflows slowed markedly following the pandemic-driven 1Q20 withdrawals, as estimated net asset outflows fell in 2Q to \$12.2 billion, or 0.3 percent of total industry capital. *HRF Global Hedge Fund Industry Report*

II. Live Universe Comparisons and Reporting

Wilshire Public Plan Sponsor Universe



Number of Plans	252
Median Size	\$316.9 Million
Total Assets	\$2.6 Trillion
Total Plans over \$1 Billion	93
Total Plans between \$100 - \$1,000 Million	88
Total Plans between \$20 Million - \$100 Million	42
Total Plans under \$20 Million	29

About Wilshire Associates

The Wilshire Cooperative is collaboration between Wilshire Associates and more than 60 independent investment consulting firms. Wilshire provides advanced performance measurement and attribution reporting systems to participating firms while Cooperative members provide asset and performance data for their sponsor clients. These are then pooled into peer groups for comparative purposes. Today, the Wilshire Cooperative is the standard utilized by over 1600 plan sponsors with assets over \$3.9 trillion dollars.

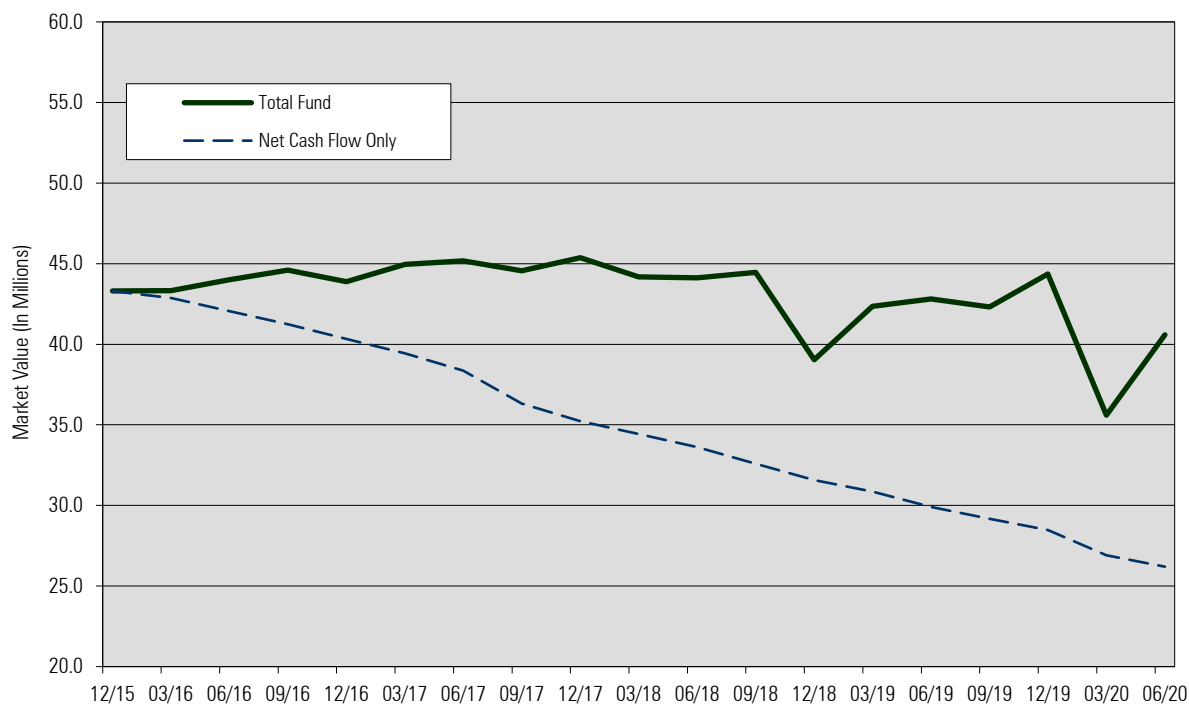
Our Universe Comparisons

As a Wilshire affiliate, we are granted access to large and diverse peer comparisons, including total fund, portfolio-level, and style-based universes. The Wilshire Public Fund Universe (above) includes the actual, live results of over 250 public pension systems across the country. These are real public funds who face similar investment restrictions and guidelines to your own. These peer-to-peer performance comparisons are critical to the evaluation process.

Our Reporting

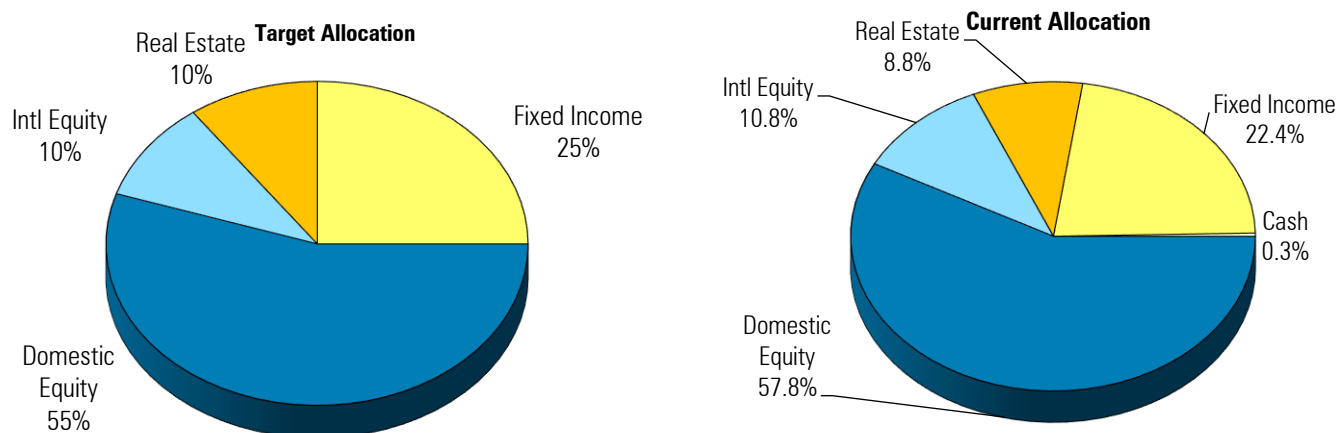
Unique to Southeastern Advisory Services is our customized reporting platform. We have the ability to accurately calculate performance against virtually any benchmark, comparison or metric. These industry-leading tools include sophisticated attribution analyses and holdings-based style and characteristic analysis. Our goal is to deliver a clear, easily-understood picture of performance that fairly assesses the effectiveness of your investment policy, strategy and managers. Each performance report is fully-customized based on your input. We welcome your requests and suggestions.

IV. PORTFOLIO GROWTH- PERIOD ENDED JUNE 30, 2020



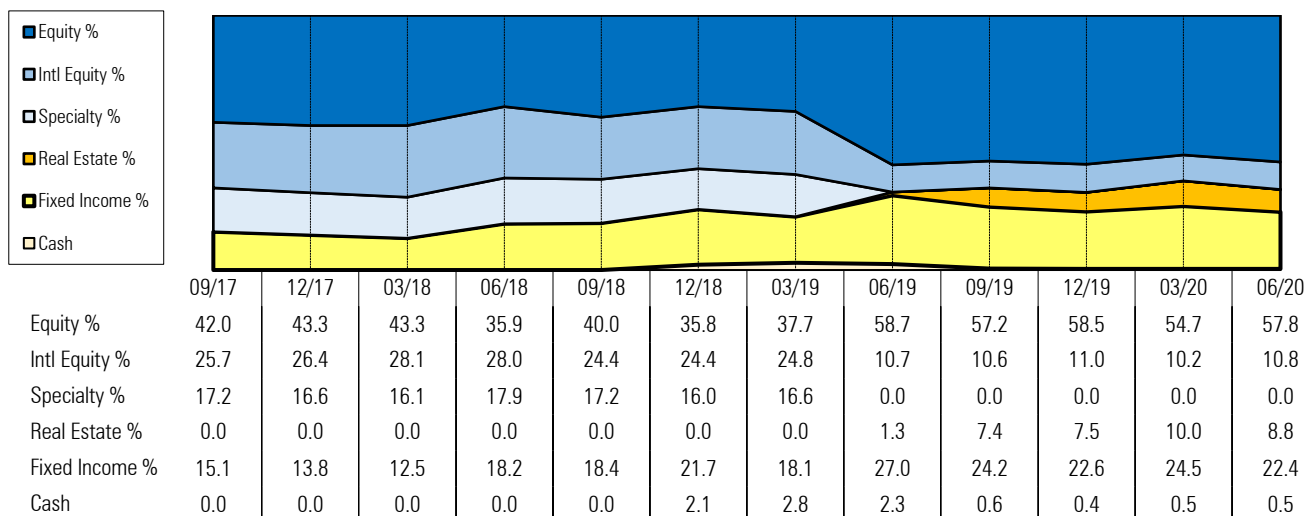
Period Ending	Beginning Value \$(000)	Net Cash Flow	Net Gain/Loss	Ending Value \$(000)	Quarterly Return	Fiscal Year Return
Mar-16	43,302	-432	463	43,333	1.1%	
Jun-16	43,333	-816	1,492	44,010	3.3%	
Sep-16	44,010	-808	1,400	44,601	3.0%	
Dec-16	44,559	-915	199	43,885	0.3%	8.5%
Mar-17	43,885	-905	1,981	44,962	4.4%	
Jun-17	44,962	-1,060	1,263	45,165	2.7%	
Sep-17	45,165	-2,053	1,447	44,559	3.1%	
Dec-17	44,559	-1,086	1,898	45,371	4.2%	15.8%
Mar-18	45,371	-783	-401	44,186	-1.0%	
Jun-18	44,186	-823	758	44,121	1.6%	
Sep-18	44,121	-1,034	1,370	44,457	3.0%	
Dec-18	44,457	-1,018	-4,410	38,030	-10.1%	-6.6%
Mar-19	38,079	-724	4,048	42,354	10.3%	
Jun-19	42,354	-941	1,393	42,806	2.9%	
Sep-19	42,806	-738	253	42,321	0.6%	
Dec-19	42,321	-699	2,730	44,353	6.5%	21.8%
Mar-20	44,353	-1,566	-7,183	35,603	-16.4%	
Jun-20	35,603	-705	5,690	40,589	16.1%	-3.0%
Total	43,302	-17,105	14,392	40,589	36.6%	
Absolute Return Objective:						7.50%*

V. ALLOCATION OF ASSETS



<u>Asset Class</u>	<u>Target Allocation</u>	<u>Current Allocation</u>
Domestic Equity Funds	55%	57.8%
Fixed Income Funds	25%	22.4%
International Equity Funds	10%	10.8%
Real Estate	10%	8.8%
Cash Equivalents	0%	0.3%

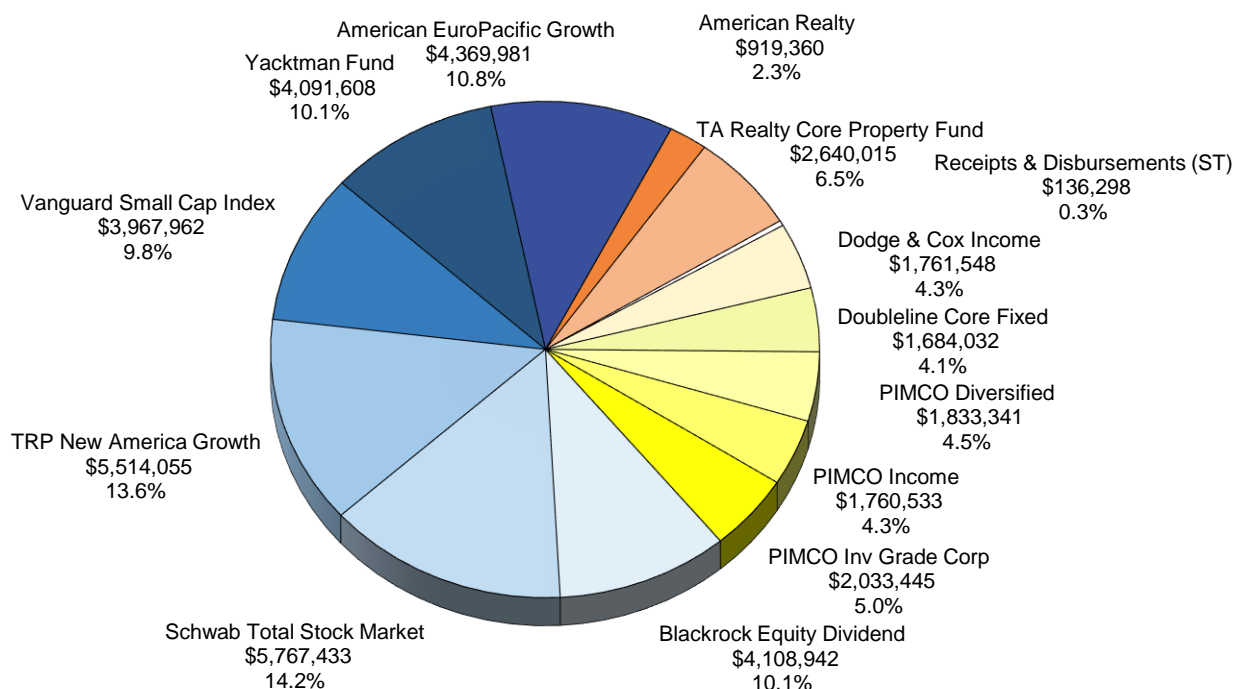
Historical Asset Allocation



*Former Manager Westwood's custom benchmark was 80% Global Equity/20% Fixed Income.

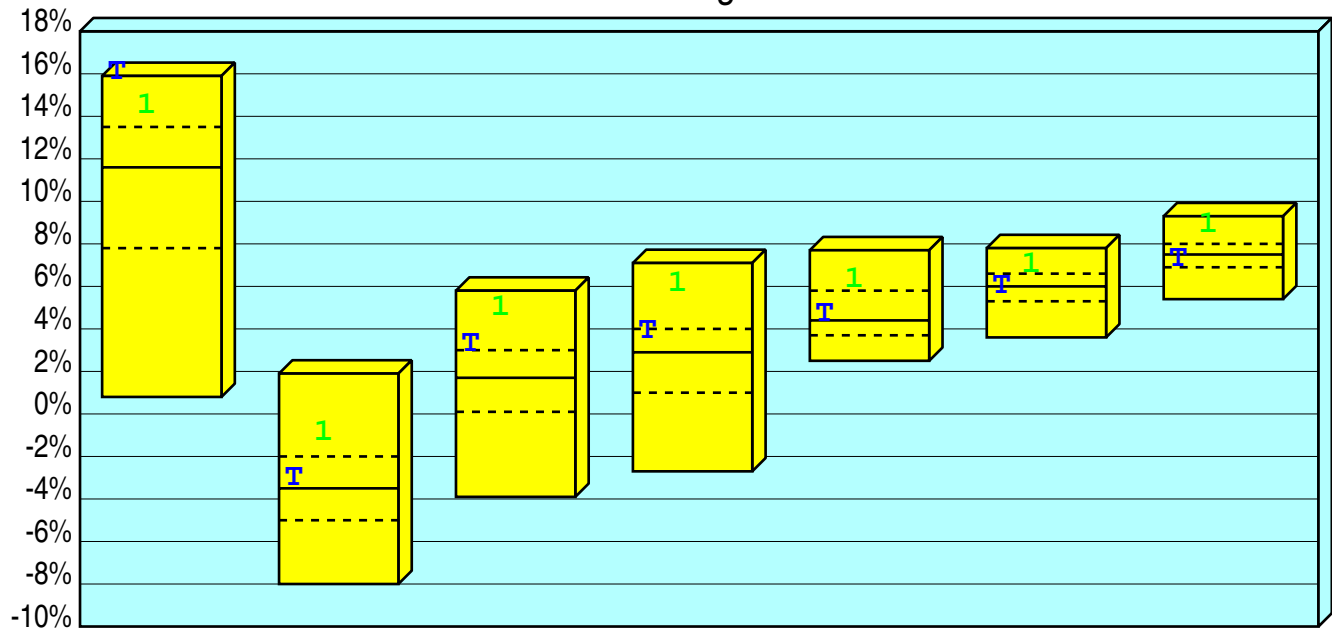
*Former manager Westwood's specialty category included REITS/MLPS/Converts.

VI. MANAGER ALLOCATION AND CASH FLOWS- Quarter ending June 30, 2020



Manager	Beginning Value	% Alloc	Net Cash Flow	Net Gain/Loss	Ending Value	% Alloc
Blackrock Equity Dividend	\$3,688,042	10.4%	(\$96,152)	\$517,052	\$4,108,942	10.1%
Schwab Total Stock Market	\$4,736,691	13.3%	(\$13,818)	\$1,044,560	\$5,767,433	14.2%
TRP New America Growth	\$4,232,610	11.9%	(\$13,818)	\$1,295,263	\$5,514,055	13.6%
Yacktman Fund	\$3,612,745	10.1%	(\$96,152)	\$575,015	\$4,091,608	10.1%
Domestic Equity	\$16,270,088	45.7%	(\$219,940)	\$3,431,890	\$19,482,038	48.0%
Vanguard Small Cap Index	\$3,210,686	9.0%	(\$96,152)	\$853,428	\$3,967,962	9.8%
Domestic Small Cap Equity	\$3,210,686	9.0%	(\$96,152)	\$853,428	\$3,967,962	9.8%
American EuroPacific Growth	\$3,641,258	10.2%	(\$96,152)	\$824,875	\$4,369,981	10.8%
International Equity	\$3,641,258	10.2%	(\$96,152)	\$824,875	\$4,369,981	10.8%
Dodge & Cox Income Fund	\$1,675,557	4.7%	(\$13,818)	\$99,809	\$1,761,548	4.3%
Doubleline Core Fixed Income	\$1,611,124	4.5%	(\$13,818)	\$86,726	\$1,684,032	4.1%
PIMCO Diversified Fund	\$1,801,323	5.1%	(\$96,152)	\$128,170	\$1,833,341	4.5%
PIMCO Income Fund	\$1,745,053	4.9%	(\$96,152)	\$111,632	\$1,760,533	4.3%
PIMCO Inv Grade Corp Bond	\$1,885,768	5.3%	(\$13,818)	\$161,495	\$2,033,445	5.0%
Fixed Income	\$8,718,825	24.5%	(\$233,758)	\$587,832	\$9,072,899	22.4%
American Realty	\$922,539	2.6%	(\$2,866)	(\$313)	\$919,360	2.3%
TA Realty (Core)	\$2,651,983	7.4%	(\$4,641)	(\$7,327)	\$2,640,015	6.5%
Real Estate	\$3,574,522	10.0%	(\$7,507)	(\$7,640)	\$3,559,375	8.8%
Money Market	\$188,100	0.5%	(\$51,807)	\$5	\$136,298	0.3%
Total Fund	\$35,603,479	100.0%	(\$705,316)	\$5,690,390	\$40,588,553	100.0%

Odessa Firefighters' Relief & Retirement Cumulative Performance Comparison Total Returns of Total Fund Public Sponsors Periods Ending 6/20

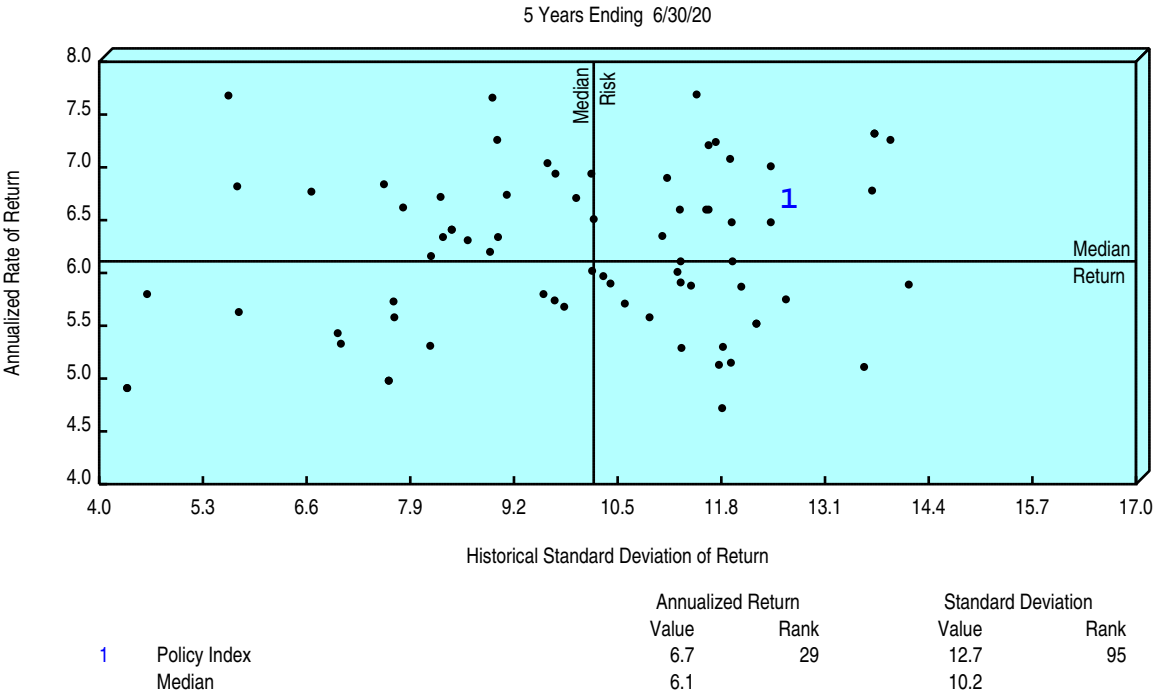
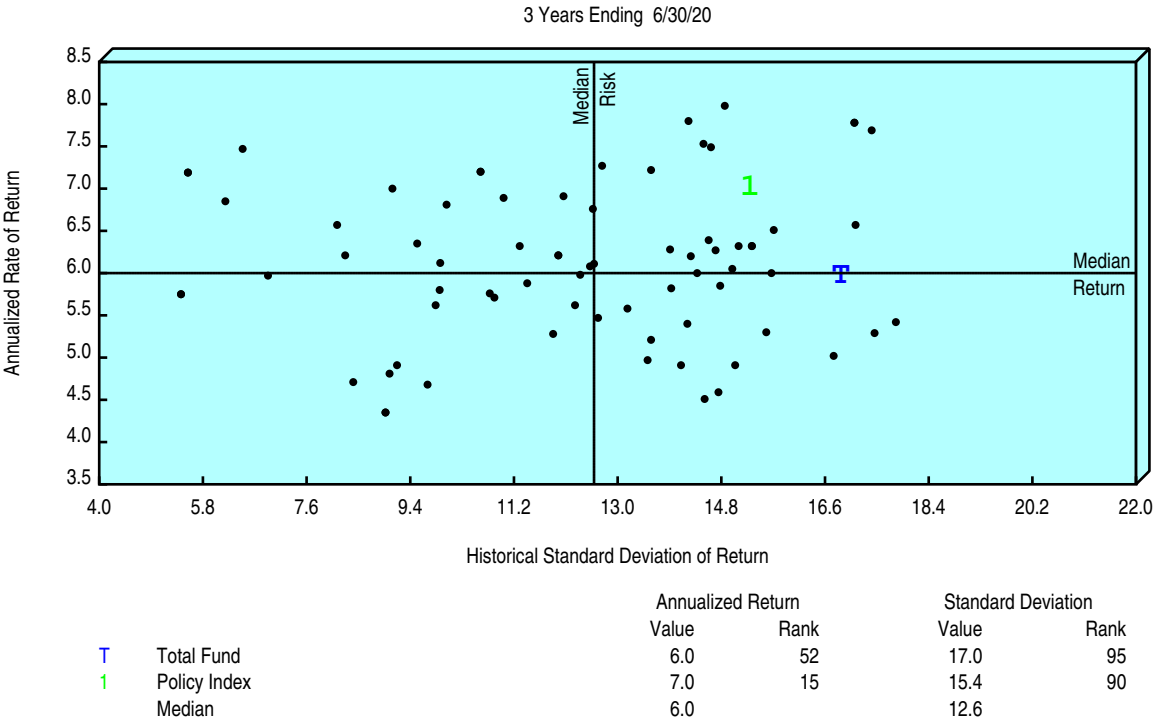


	Last Qtr	Last 2 Qtrs	Last 3 Qtrs	Last Year	Last 2 Years	Last 3 Years	Last 4 Years
High	15.9	1.9	5.8	7.1	7.7	7.8	9.3
1st Qt	13.5	-2.0	3.0	4.0	5.8	6.6	8.0
Median	11.6	-3.5	1.7	2.9	4.4	6.0	7.5
3rd Qt	7.8	-5.0	0.1	1.0	3.7	5.3	6.9
Low	0.8	-8.0	-3.9	-2.7	2.5	3.6	5.4
T Total Fund							
Return	16.1	-3.0	3.3	3.9	4.7	6.0	7.3
Rank	4	44	21	27	44	52	58
I Policy Index							
Return	14.5	-0.9	5.0	6.1	6.3	7.0	8.9
Rank	9	13	11	14	17	15	9

Odessa Firefighters' Relief & Retirement

Return vs Risk

Total Returns of Total Fund Public Sponsors



VII. TOTAL FUND PERFORMANCE COMPARISONS

Manager/Index/Universe Rank	Quarter	FYTD	1 Year	3 Year	5 Year
Total Portfolio	16.1%	-3.0%	3.9%	6.0%	n/a
Total Portfolio (Net)	16.1%	-3.0%	3.9%	5.7%	n/a
Target Index	14.5%	-0.9%	6.1%	7.0%	n/a
Goal Return (7.50%)	1.9%	7.5%	7.5%	7.5%	n/a
Wilshire Public Fund Ranking	4	44	27	52	n/a
Total Equities	22.2%	-5.0%	3.5%	7.2%	n/a
MSCI ACWI	19.2%	-6.3%	2.1%	6.1%	n/a
Russell 1000	21.8%	-2.8%	7.5%	10.6%	n/a
Russell 1000 Growth	27.8%	9.8%	23.3%	19.0%	n/a
Russell 1000 Value	14.3%	-16.3%	-8.8%	1.8%	n/a
Rank vs. Equity Returns of Public Funds	17	43	46	60	n/a
Total Real Estate	-0.2%	1.5%	6.2%	n/a	n/a
NCREIF ODCE	-1.6%	-0.6%	2.2%	n/a	n/a
NCREIF Property Index	-1.0%	-0.3%	2.7%	n/a	n/a
Rank vs. Real Estate Returns of Public Funds	70	10	10	n/a	n/a
Total Fixed Income	6.8%	0.9%	3.9%	3.8%	n/a
BbgBarc US Aggregate	2.9%	6.1%	8.7%	5.3%	n/a
Rank vs. Fixed Returns of Public Funds	6	84	83	79	n/a

*Prior to 3Q19 the Target Index was 80% MSCI ACWI/ 20% BbgBarc US Aggregate

*The new target index effective 3Q19 is 45% R1000 / 10% EAFE/ 10% R2500 / 10% NCREIF / 25% BCA

VIII. TOTAL FUND FISCAL YEAR PERFORMANCE COMPARISONS

Manager/Index/Universe Rank	FYTD 20	FY2019
Total Portfolio	-3.0%	21.8%
Total Portfolio (Net)	-3.0%	21.6%
Target Index	-0.9%	22.3%
Goal Return (7.50%)	7.5%	7.5%
Wilshire Public Fund Ranking	44	15
Total Equities	-5.0%	27.9%
MSCI ACWI	-6.3%	26.6%
Russell 1000	-2.8%	31.4%
Russell 1000 Growth	9.8%	36.4%
Russell 1000 Value	-16.3%	26.5%
Rank vs. Equity Returns of Public Funds	43	64
Total Real Estate	1.5%	n/a
NCREIF ODCE	-0.6%	n/a
NCREIF Property Index	-0.3%	n/a
Rank vs. Real Estate Returns of Public Funds	10	n/a
Total Fixed Income	0.9%	9.9%
BbgBarc US Aggregate	6.1%	8.7%
Rank vs. Fixed Returns of Public Funds	84	21

IX. DOMESTIC EQUITY PERFORMANCE* COMPARISONS

Manager/Index/Universe Rank	Quarter	1 Year	3 Year	5 Year
Blackrock Equity Dividend	14.1%	-4.8%	n/a	n/a
Russell 1000 Value	14.3%	-8.8%	n/a	n/a
Rank vs. Large Cap Value Portfolios	72	20	n/a	n/a
Schwab Total Stock Market	22.1%	6.4%	n/a	n/a
Russell 1000	21.8%	7.5%	n/a	n/a
Rank vs. Large Cap Mutual Funds	42	53	n/a	n/a
TRowe Price New American Growth	30.7%	24.6%	n/a	n/a
Russell 1000 Growth	27.8%	23.3%	n/a	n/a
Rank vs. Large Growth Mutual Funds	18	19	n/a	n/a
Vanguard Small Cap Index	26.7%	-5.8%	n/a	n/a
Russell 2000	25.4%	-6.6%	n/a	n/a
Rank vs. Small Cap Value Portfolios	18	3	n/a	n/a
Yacktman Fund	16.0%	-3.6%	n/a	n/a
CPI +4%	0.9%	4.7%	n/a	n/a

X. INTERNATIONAL EQUITY PERFORMANCE* COMPARISONS

Manager/Index/Universe Rank	Quarter	1 Year	3 Year	5 Year
American Funds EuroPacific Growth	22.8%	3.1%	n/a	n/a
MSCI EAFE	10.4%	-1.7%	n/a	n/a
Rank vs. International Equity Mutual Funds	19	20	n/a	n/a

*Equity Mutual Funds were funded on 4/9/19.

Release date 06-30-2020

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BlackRock Equity Dividend Instl (USD)

Morningstar Analyst Rating™
Silver
 03-16-2020

Overall Morningstar Rating™
 ★★★★★
 1,109 US Fund Large Value

Standard Index
 S&P 500 TR USD

Category Index
 Russell 1000 Value TR USD

Morningstar Cat
 US Fund Large Value

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-2.64	2.30	6.18	-12.23	-7.17
2019	10.27	4.67	2.00	8.33	27.52
2020	-24.33	14.03	—	—	-13.71
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	-4.66	3.88	6.93	10.61	9.42
Std 06-30-2020	-4.66	—	6.93	10.61	9.42
Total Return	-4.66	3.88	6.93	10.61	9.42
+/- Std Index	-12.17	-6.85	-3.80	-3.38	—
+/- Cat Index	4.17	2.05	2.29	0.20	—
% Rank Cat	28	29	12	29	—
No. in Cat	1193	1109	970	703	—

7-day Yield	Subsidized	Unsubsidized
30-day SEC Yield 07-31-20	2.23	2.09

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 800-441-7762 or visit www.blackrock.com.

Fees and Expenses

Sales Charges

Front-End Load %	NA
Deferred Load %	NA

Fund Expenses

Management Fees %	0.56
12b1 Expense %	NA
Gross Expense Ratio %	0.71

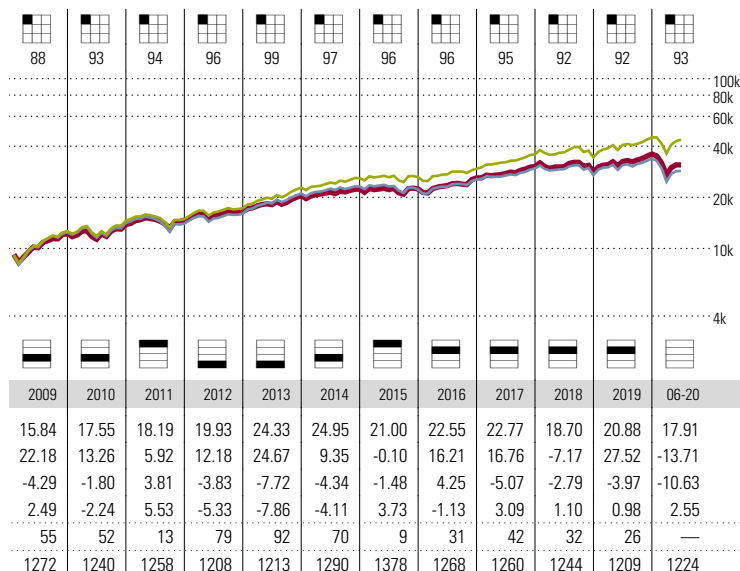
Risk and Return Profile

	3 Yr	5 Yr	10 Yr
Morningstar Rating™	4★	4★	4★
Morningstar Risk	-Avg	-Avg	-Avg
Morningstar Return	+Avg	+Avg	+Avg
Standard Deviation	16.58	14.50	12.79
Mean	3.88	6.93	10.61
Sharpe Ratio	0.21	0.46	0.81

MPT Statistics	Standard Index	Best Fit Index
		Russell 1000 Value TR USD
Alpha	-6.00	1.89
Beta	0.95	0.91
R-Squared	95.18	98.03
12-Month Yield		1.92%
Potential Cap Gains Exp		21.99%

Operations

Family:	BlackRock
Manager:	Multiple
Tenure:	6.0 Years
Objective:	Equity-Income
Base Currency:	USD



Investment Style
 Equity
 Stocks %

Growth of \$10,000

BlackRock Equity Dividend Instl	31,035
Category Average	28,597
Standard Index	43,715

Performance Quartile (within category)

History	NAV/Price	Total Return %	+/- Standard Index	+/- Category Index	% Rank Cat	No. of Funds in Cat
NAV/Price	17.91	-13.71	-10.63	2.55	—	—
Total Return %	—	—	—	—	—	—
+/- Standard Index	—	—	—	—	—	—
+/- Category Index	—	—	—	—	—	—
% Rank Cat	—	—	—	—	—	—
No. of Funds in Cat	—	—	—	—	—	—

Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 05-2020	Share Amount	Holdings : 77 Total Stocks , 46 Total Fixed-Income, 40% Turnover Ratio	Net Assets %
Cash	6.99	6.99	0.00	—	—	BlackRock Liquidity T-Fund Instl	6.66
US Stocks	70.88	70.88	0.00	—	1,099 mil	Verizon Communications Inc	3.88
Non-US Stocks	22.12	22.12	0.00	—	12 mil	Bank of America Corp	3.24
Bonds	0.00	0.00	0.00	—	22 mil	Citigroup Inc	3.11
Other/Not Clsfd	0.00	0.00	0.00	—	10 mil	Sanofi SA	2.43
Total	100.00	100.00	0.00	—	4 mil	Medtronic PLC	2.17
				—	1 mil	Anthem Inc	2.17
				—	6 mil	Cognizant Technology Solutions Cor	2.12
				—	11 mil	American International Group Inc	2.08
				—	6 mil	Unilever NV ADR	2.08
				—	7 mil	Royal Philips NV	2.04
				—	4 mil	Bayer AG	2.01
				—	53 mil	BAE Systems PLC	1.91
				—	12 mil	Wells Fargo & Co	1.89
				—	8 mil	Altria Group Inc	1.88

Equity Style	Value	Blend	Growth
	Large	Mid	Small

Portfolio Statistics	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	13.7	0.60	0.85
P/C Ratio TTM	8.3	0.60	0.90
P/B Ratio TTM	1.6	0.47	0.81
Geo Avg Mkt Cap \$mil	66253	0.48	0.71

Fixed-Income Style	Ltd	Mod	Ext
	High	Mid	Low

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure	Stocks %	Rel Std Index
Americas	76.3	0.77
Greater Europe	20.4	22.22
Greater Asia	3.3	77.47

Sector Weightings	Stocks %	Rel Std Index
Cyclical	33.0	1.14
Basic Materials	1.7	0.78
Consumer Cyclical	3.9	0.37
Financial Services	27.4	2.07
Real Estate	0.0	0.00
Sensitive	32.9	0.72
Communication Services	7.2	0.67
Energy	8.5	3.00
Industrials	7.0	0.84
Technology	10.3	0.43
Defensive	34.1	1.35
Consumer Defensive	9.8	1.32
Healthcare	19.1	1.29
Utilities	5.2	1.71

Release date 06-30-2020

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Schwab Total Stock Market Index (USD)

Morningstar Analyst Rating™
Gold
 03-19-2020

Overall Morningstar Rating™
 ★★★★★
 1,230 US Fund Large Blend

Standard Index
 S&P 500 TR USD

Category Index
 Russell 1000 TR USD

Morningstar Cat
 US Fund Large Blend

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.59	3.87	7.09	-14.36	-5.30
2019	14.04	4.08	1.12	9.04	30.88
2020	-20.98	22.07	—	—	-3.54

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	6.36	9.93	9.95	13.65	6.62
Std 06-30-2020	6.36	—	9.95	13.65	6.62
Total Return	6.36	9.93	9.95	13.65	6.62

+/- Std Index	-1.14	-0.80	-0.78	-0.34	—
+/- Cat Index	-1.12	-0.71	-0.53	-0.32	—

% Rank Cat	41	37	32	22	—
No. in Cat	1380	1230	1058	806	—

7-day Yield	Subsidized	Unsubsidized
30-day SEC Yield	—	—

Performance Disclosure

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Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 877-824-5615 or visit www.schwab.com.

Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.03

12b1 Expense %

NA

Gross Expense Ratio %

0.03

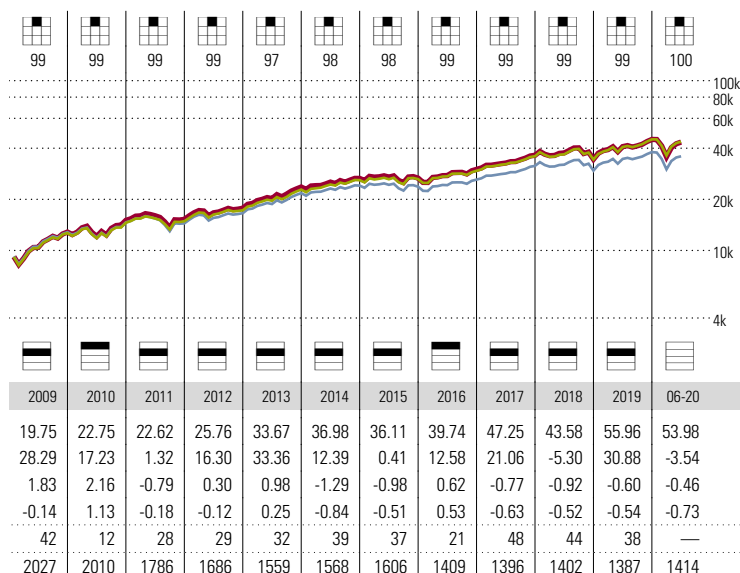
Risk and Return Profile

	3 Yr	5 Yr	10 Yr
Morningstar Rating™	3★	3★	4★
Morningstar Risk	+Avg	+Avg	Avg
Morningstar Return	Avg	+Avg	+Avg

	3 Yr	5 Yr	10 Yr
Standard Deviation	17.72	15.37	13.94
Mean	9.93	9.95	13.65
Sharpe Ratio	0.53	0.62	0.95

MPT Statistics	Standard Index	Best Fit Index
	USD	Russell 3000 TR
Alpha	-1.02	-0.11
Beta	1.04	1.00
R-Squared	99.58	100.00

12-Month Yield	—
Potential Cap Gains Exp	39.76%



Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 06-2020	Share Amount	Holdings :	Net Assets
Cash	0.07	0.07	0.00	—	—	3,117 Total Stocks, 0 Total Fixed-Income, 3% Turnover Ratio	%
US Stocks	98.79	98.79	0.00	—	—	—	—
Non-US Stocks	1.13	1.13	0.00	—	—	—	—
Bonds	0.00	0.00	0.00	—	—	—	—
Other/Not Clsfd	0.00	0.00	0.00	—	—	—	—
Total	100.00	100.00	0.00	—	—	—	—

Equity Style

Value	Blend	Growth
Large	—	—
Mid	—	—
Small	—	—

Fixed-Income Style

Ltd	Mod	Ext
High	—	—
Mid	—	—
Low	—	—

Credit Quality Breakdown —

	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure

	Stocks %	Rel Std Index
Americas	98.9	1.00
Greater Europe	0.9	0.94
Greater Asia	0.2	5.74

Share Chg since 06-2020	Share Amount	Holdings :	Net Assets
—	—	—	—
—	3 mil	Microsoft Corp	5.05
—	1 mil	Apple Inc	4.87
+	147,981	Amazon.com Inc	3.78
+	848,997	Facebook Inc A	1.79
+	105,970	Alphabet Inc A	1.39
—	103,290	Alphabet Inc Class C	1.35
+	929,974	Johnson & Johnson	1.21
+	686,596	Berkshire Hathaway Inc Class B	1.14
—	595,482	Visa Inc Class A	1.07
—	874,341	Procter & Gamble Co	0.97
—	1 mil	JPMorgan Chase & Co	0.94
+	334,703	UnitedHealth Group Inc	0.91
+	379,565	The Home Depot Inc	0.88
—	311,908	Mastercard Inc A	0.85
—	1 mil	Intel Corp	0.83

Sector Weightings

	Stocks %	Rel Std Index
Cyclical	30.4	1.06
Basic Materials	2.3	1.06
Consumer Cyclical	11.1	1.04
Financial Services	13.2	1.00
Real Estate	3.9	1.36
Sensitive	45.0	0.98
Communication Services	9.9	0.92
Energy	2.7	0.94
Industrials	8.9	1.06
Technology	23.5	0.98
Defensive	24.6	0.98
Consumer Defensive	6.7	0.91
Healthcare	14.9	1.01
Utilities	2.9	0.95

Operations

Family:	Schwab Funds
Manager:	Multiple
Tenure:	7.5 Years
Objective:	Growth and Income

Base Currency:	USD
Ticker:	SWTSX
ISIN:	US8085097561
Minimum Initial Purchase:	\$0

Purchase Constraints:	—
Incept:	06-01-1999
Type:	MF
Total Assets:	\$11,782.61 mil

Release date 06-30-2020

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T. Rowe Price New America Growth (USD)

Morningstar Analyst Rating™
Silver
09-10-2019

Overall Morningstar Rating™
★★★★
1,237 US Fund Large Growth

Standard Index
S&P 500 TR USD

Category Index
Russell 1000
Growth TR USD

Morningstar Cat
US Fund Large Growth

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	4.41	5.70	7.21	-14.40	1.28
2019	15.76	5.35	0.08	10.65	35.03
2020	-13.84	30.64	—	—	12.56

Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	24.64	19.93	16.55	17.57	11.50
Std 06-30-2020	24.64	—	16.55	17.57	11.50
Total Return	24.64	19.93	16.55	17.57	11.50

+/- Std Index	17.14	9.20	5.82	3.58	—
+/- Cat Index	1.36	0.94	0.66	0.34	—

% Rank Cat	18	20	13	14	—
No. in Cat	1343	1237	1084	809	—

7-day Yield 08-18-20	Subsidized	Unsubsidized
30-day SEC Yield	0.00	—

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 800-638-5660 or visit www.troweprice.com.

Fees and Expenses

Sales Charges

Front-End Load %	NA
Deferred Load %	NA

Fund Expenses

Management Fees %	0.64
12b1 Expense %	NA

Gross Expense Ratio %	0.78
-----------------------	------

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
Morningstar Rating™	4★	4★	4★
Morningstar Risk	Avg	+Avg	Avg
Morningstar Return	+Avg	+Avg	+Avg

	3 Yr	5 Yr	10 Yr
Standard Deviation	18.29	16.95	15.12
Mean	19.93	16.55	17.57
Sharpe Ratio	1.00	0.92	1.11

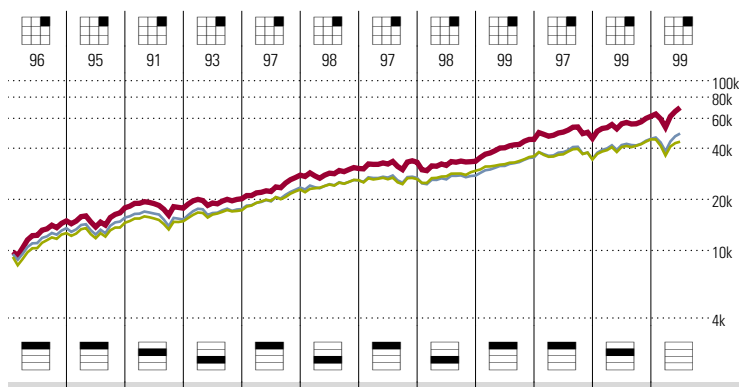
MPT Statistics	Standard Index	Best Fit Index
		Morningstar US Large Growth TR

Alpha	7.85	-0.98
Beta	1.04	1.04
R-Squared	93.06	97.55

12-Month Yield	—
Potential Cap Gains Exp	35.56%

Operations

Family:	T. Rowe Price
Manager:	Justin White
Tenure:	4.3 Years
Objective:	Growth
Base Currency:	USD



Investment Style
Equity
Stocks %

Growth of \$10,000

T. Rowe Price New America Growth	69,425
Category Average	48,835
Standard Index	43,715

Performance Quartile
(within category)

History	NAV/Price	Total Return %	+/- Standard Index	+/- Category Index	% Rank Cat	No. of Funds in Cat
2009	28.03	49.33	22.87	12.13	8	1796
2010	32.99	19.34	4.27	2.63	18	1718
2011	31.81	-0.41	-2.52	-3.05	32	1683
2012	35.92	13.56	-2.45	-1.70	67	1681
2013	44.17	37.73	5.34	4.24	16	1712
2014	42.01	9.44	-4.25	-3.61	58	1710
2015	41.96	8.80	7.42	3.13	12	1681
2016	40.09	1.40	-10.56	-5.67	66	1463
2017	48.03	34.57	12.73	4.35	11	1363
2018	43.47	1.28	5.66	2.79	18	1405
2019	54.77	35.03	3.55	-1.35	28	1360
06-20	61.65	12.56	15.64	2.75	—	1363

Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 03-2020	Share Amount	Holdings : 84 Total Stocks, 0 Total Fixed-Income, 84% Turnover Ratio	Net Assets %
Cash	0.86	0.86	0.00				
US Stocks	88.78	88.78	0.00				
Non-US Stocks	9.84	9.84	0.00	⊖	225,653	Amazon.com Inc	10.05
Bonds	0.00	0.00	0.00	⊕	2 mil	Microsoft Corp	7.14
Other/Not Clsfd	0.53	0.53	0.00	⊕	1 mil	Apple Inc	6.39
Total	100.00	100.00	0.00	⊕	165,152	Alphabet Inc Class C	3.77
				⊖	876,441	Facebook Inc A	3.21
					652,653	UnitedHealth Group Inc	3.11
				⊖	739,316	Wix.com Ltd	3.06
				⊖	1 mil	AbbVie Inc	2.22
				⊖	286,754	Netflix Inc	2.11
				⊕	1 mil	HCA Healthcare Inc	1.82
				⊕	4 mil	Snap Inc Class A	1.70
				⊖	518,445	Teladoc Health Inc	1.60
					709,212	Texas Instruments Inc	1.45
				⊕	352,500	Fleetcor Technologies Inc	1.43
				⊕	217,801	Humana Inc	1.36

Equity Style	Portfolio Statistics	Port Avg	Rel Index	Rel Cat
Value Blend Growth	P/E Ratio TTM	28.9	1.27	0.96
	P/C Ratio TTM	18.8	1.35	0.89
	P/B Ratio TTM	5.7	1.74	0.87
	Geo Avg Mkt Cap \$mil	119709	0.86	0.54

Fixed-Income Style

Ltd	Mod	Ext	Avg Eff Maturity	Avg Eff Duration	Avg Wtd Coupon	Avg Wtd Price
			—	—	—	—
			—	—	—	—
			—	—	—	—
			—	—	—	—

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure	Stocks %	Rel Std Index
Americas	90.9	0.92
Greater Europe	6.2	6.72
Greater Asia	3.0	69.07

Sector Weightings

	Stocks %	Rel Std Index
Cyclical	27.6	0.96
Basic Materials	1.2	0.56
Consumer Cyclical	17.6	1.66
Financial Services	6.8	0.52
Real Estate	1.9	0.67
Sensitive	52.4	1.14
Communication Services	14.7	1.36
Energy	0.6	0.21
Industrials	4.2	0.50
Technology	32.9	1.37
Defensive	20.0	0.80
Consumer Defensive	1.2	0.16
Healthcare	16.2	1.10
Utilities	2.6	0.86

Release date 06-30-2020

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Vanguard Small Cap Index Adm (USD)

Morningstar Analyst Rating™



07-08-2020

Overall Morningstar Rating™



615 US Fund Small Blend

Standard Index

S&P 500 TR USD

Category Index

Russell 2000 TR USD

Morningstar Cat

US Fund Small Blend

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.21	6.20	4.77	-18.33	-9.31
2019	16.18	2.87	-1.45	8.14	27.37
2020	-30.07	26.66	—	—	-11.42
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	-5.60	3.99	5.40	11.59	8.29
Std 06-30-2020	-5.60	—	5.40	11.59	8.29
Total Return	-5.60	3.99	5.40	11.59	8.29
+/- Std Index	-13.10	-6.74	-5.33	-2.39	—
+/- Cat Index	1.03	1.98	1.11	1.09	—
% Rank Cat	12	5	6	4	—
No. in Cat	669	615	495	359	—

	Subsidized	Unsubsidized
7-day Yield	—	—
30-day SEC Yield 08-18-20	1.49	1.49

Performance Disclosure

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Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.04

12b1 Expense %

NA

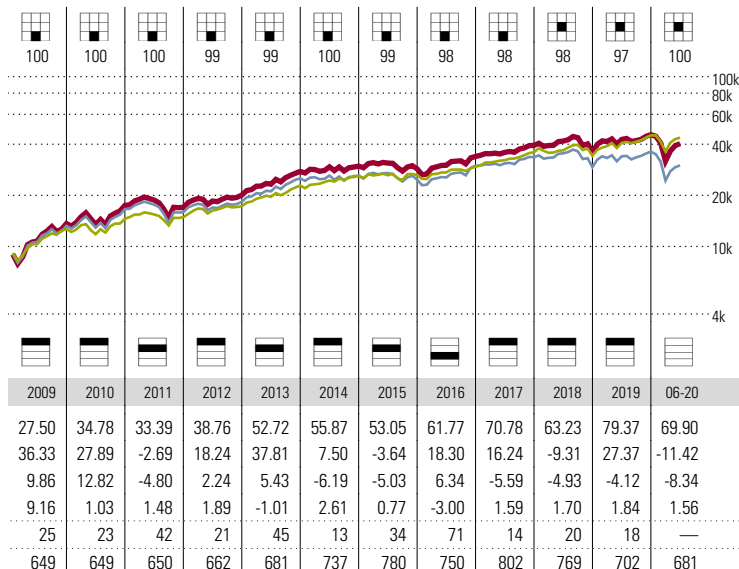
Gross Expense Ratio %

0.05

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	615 funds	495 funds	359 funds
Morningstar Rating™	5★	5★	5★
Morningstar Risk	Avg	-Avg	-Avg
Morningstar Return	High	High	High
	3 Yr	5 Yr	10 Yr
Standard Deviation	22.62	19.45	17.76
Mean	3.99	5.40	11.59
Sharpe Ratio	0.21	0.31	0.68

MPT Statistics	Standard Index	Best Fit Index
		Morningstar US Small Cap TR USD
Alpha	-7.83	2.43
Beta	1.27	0.97
R-Squared	91.00	99.74
12-Month Yield		1.46%
Potential Cap Gains Exp		20.61%



Investment Style
Equity
Stocks %

Growth of \$10,000

Vanguard Small Cap Index Adm
40,292
Category Average
30,035
Standard Index
43,715

Performance Quartile
(within category)

History

NAV/Price	NAV/Price
Total Return %	Total Return %
+/- Standard Index	+/- Standard Index
+/- Category Index	+/- Category Index
% Rank Cat	% Rank Cat
No. of Funds in Cat	No. of Funds in Cat

Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 06-2020	Share Amount	Holdings : 1,375 Total Stocks, 3 Total Fixed-Income, 16% Turnover Ratio	Net Assets %
Cash	0.39	0.39	0.00	—	—	—	—
US Stocks	98.97	98.97	0.00	—	—	—	—
Non-US Stocks	0.64	0.64	0.00	⊕	2 mil	Coupa Software Inc	0.53
Bonds	0.00	0.00	0.00	⊖	2 mil	Teladoc Health Inc	0.41
Other/Not Clsfd	0.01	0.01	0.00	⊖	4 mil	Teradyne Inc	0.40
Total	100.00	100.00	0.00	⊖	1 mil	Zebra Technologies Corp	0.39
				⊖	1 mil	EPAM Systems Inc	0.38
				⊖	2 mil	Steris PLC	0.38
				⊕	2 mil	Insulet Corp	0.37
				⊖	3 mil	Etsy Inc	0.36
				⊖	3 mil	Atmos Energy Corp	0.35
				⊕	4 mil	Catalent Inc	0.34
				⊖	2 mil	IDEX Corp	0.34
				⊕	2 mil	Sarepta Therapeutics Inc	0.34
				⊖	689,954	Fair Isaac Corp	0.33
				⊕	1 mil	MongoDB Inc Class A	0.33
				⊖	917,892	Teledyne Technologies Inc	0.33

Fixed-Income Style

	Ltd	Mod	Ext
Avg Eff Maturity	—	—	—
Avg Eff Duration	—	—	—
Avg Wtd Coupon	—	—	—
Avg Wtd Price	—	—	—

Credit Quality Breakdown —

	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure

	Stocks %	Rel Std Index
Americas	99.6	1.01
Greater Europe	0.2	0.21
Greater Asia	0.2	5.67

Sector Weightings

	Stocks %	Rel Std Index
Cyclical	37.1	1.29
Basic Materials	4.0	1.82
Consumer Cyclical	11.4	1.07
Financial Services	12.3	0.93
Real Estate	9.5	3.32
Sensitive	39.9	0.87
Communication Services	3.0	0.28
Energy	2.2	0.77
Industrials	15.0	1.79
Technology	19.7	0.82
Defensive	23.0	0.91
Consumer Defensive	4.0	0.55
Healthcare	15.8	1.07
Utilities	3.1	1.02

Operations

Family: Vanguard
Manager: Multiple
Tenure: 4.3 Years
Objective: Small Company

Base Currency: USD
Ticker: VSMAX
ISIN: US9229086866
Minimum Initial Purchase: \$3,000

Purchase Constraints: —
Incept: 11-13-2000
Type: MF
Total Assets: \$29,056.42 mil

Release date 06-30-2020

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AMG Yacktman I (USD)

Morningstar Analyst Rating™



09-13-2019

Overall Morningstar Rating™



1,109 US Fund Large Value

Standard Index

S&P 500 TR USD

Category Index

Russell 1000 Value

Morningstar Cat

US Fund Large Value

TR USD

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.96	3.89	3.74	-3.80	2.69
2019	7.77	2.83	-0.28	6.48	17.66
2020	-21.68	15.96	—	—	-9.18
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	-3.57	6.27	7.47	10.55	9.86
Std 06-30-2020	-3.57	—	7.47	10.55	9.86
Total Return	-3.57	6.27	7.47	10.55	9.86
+/- Std Index	-11.07	-4.46	-3.25	-3.44	—
+/- Cat Index	5.27	4.45	2.83	0.14	—
% Rank Cat	22	11	9	30	—
No. in Cat	1193	1109	970	703	—

7-day Yield 08-18-20	Subsidized	Unsubsidized
30-day SEC Yield	0.00	—

Performance Disclosure

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Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 800-835-3879 or visit www.amgfunds.com.

Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.43

12b1 Expense %

NA

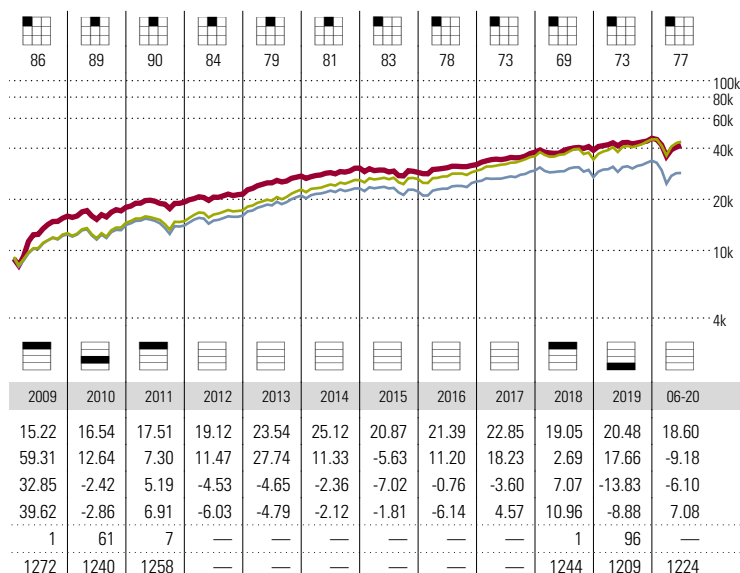
Gross Expense Ratio %

0.75

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
Morningstar Rating™	5★	5★	4★
Morningstar Risk	Low	Low	Low
Morningstar Return	+Avg	High	+Avg
Standard Deviation	13.68	11.85	10.77
Mean	6.27	7.47	10.55
Sharpe Ratio	0.39	0.57	0.93

MPT Statistics	Standard Index	Best Fit Index
		Morningstar US Mid
		Val TR USD
Alpha	-2.05	6.16
Beta	0.74	0.59
R-Squared	84.91	91.36
12-Month Yield	—	—
Potential Cap Gains Exp	—	27.66%



Investment Style

Equity

Stocks %

Growth of \$10,000

AMG Yacktman I	41,558
Category Average	28,597
Standard Index	43,715

Performance Quartile (within category)

History

NAV/Price	18.60
Total Return %	-9.18
+/- Standard Index	-6.10
+/- Category Index	7.08
% Rank Cat	—
No. of Funds in Cat	1224

Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 03-2020	Share Amount	Holdings :	Net Assets %
Cash	19.36	19.36	0.00			49 Total Stocks , 8 Total Fixed-Income, 35% Turnover Ratio	
US Stocks	50.95	50.95	0.00				
Non-US Stocks	26.17	26.17	0.00	⊖	16 mil	Samsung Electronics Co Ltd Partici	9.63
Bonds	3.52	3.52	0.00	⊕	97 mil	Bollor SA	4.73
Other/Not Clsfd	0.00	0.00	0.00		2 mil	PepsiCo Inc	3.27
Total	100.00	100.00	0.00	⊖	1 mil	Microsoft Corp	3.14
				⊖	4 mil	Brenntag AG	2.95
				⊖	2 mil	Continental AG	2.95
				⊖	130,000	Alphabet Inc Class C	2.84
				⊖	1 mil	Procter & Gamble Co	2.68
				⊖	2 mil	The Walt Disney Co	2.67
				⊖	6 mil	Fox Corp Class A	2.61
				⊖	3 mil	Sysco Corp	2.53
				⊖	1 mil	Johnson & Johnson	2.28
				⊖	90,000	Booking Holdings Inc	2.21
				⊖	12 mil	News Corp A	2.14
				⊖	20 mil	Macy's Inc	2.07

Equity Style

Value	Blend	Growth
Large		
Mid		
Small		

Portfolio Statistics

	Port Avg	Rel Index	Rel Cat
P/E Ratio TTM	17.6	0.78	1.09
P/C Ratio TTM	7.1	0.51	0.76
P/B Ratio TTM	1.7	0.53	0.90
Geo Avg Mkt Cap \$mil	37427	0.27	0.40

Fixed-Income Style

Ltd	Mod	Ext
High		
Mid		
Low		

Credit Quality Breakdown —

	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure

	Stocks %	Rel Std Index
Americas	66.1	0.67
Greater Europe	18.3	19.97
Greater Asia	15.6	362.86

Sector Weightings

	Stocks %	Rel Std Index
Cyclical	25.2	0.87
Basic Materials	5.1	2.32
Consumer Cyclical	10.4	0.98
Financial Services	9.7	0.73
Real Estate	0.0	0.00
Sensitive	48.4	1.05
Communication Services	22.0	2.04
Energy	1.3	0.46
Industrials	1.6	0.19
Technology	23.6	0.98
Defensive	26.4	1.05
Consumer Defensive	21.8	2.96
Healthcare	4.5	0.31
Utilities	0.0	0.00

Operations

Family:	AMG Funds
Manager:	Multiple
Tenure:	17.7 Years
Objective:	Growth and Income
Base Currency:	USD

Ticker:	YACKX
ISIN:	US00170K5882
Minimum Initial Purchase:	\$100,000
Minimum IRA Purchase:	\$25,000
Purchase Constraints:	—

Incept:	07-06-1992
Type:	MF
Total Assets:	\$6,745.05 mil

XI. REAL ESTATE PERFORMANCE COMPARISONS

Manager/Index/Universe Rank	Quarter	1 Year	3 Year	5 Year
American Realty Value - Gross	0.0%	6.4%	n/a	n/a
American Realty Value - Net	-0.3%	5.0%	n/a	n/a
NCREIF ODCE	-1.6%	2.2%	n/a	n/a
Rank vs. Real Estate Portfolios	52	15	n/a	n/a
TA Realty - Gross	-0.3%	6.2%	n/a	n/a
TA Realty - Net	-0.5%	5.6%	n/a	n/a
NCREIF ODCE	-1.6%	2.2%	n/a	n/a
Rank vs. Real Estate Portfolios	54	16	n/a	n/a

XII. FIXED INCOME PERFORMANCE COMPARISONS

Manager/Index/Universe Rank	Quarter	1 Year	3 Year	5 Year
Dodge & Cox Income	6.0%	8.2%	n/a	n/a
BbgBarc US Aggregate	2.9%	8.7%	n/a	n/a
Rank vs. Multi-Sector Fixed Income Port	81	5	n/a	n/a
Doubleline Core Fixed	5.4%	3.5%	n/a	n/a
BbgBarc US Aggregate	2.9%	8.7%	n/a	n/a
Rank vs. Multi-Sector Fixed Income Port	84	33	n/a	n/a
PIMCO Diversified Income	7.2%	1.8%	n/a	n/a
BbgBarc Govt/Credit	3.5%	12.1%	n/a	n/a
Rank vs. Multi-Sector Fixed Income Port	61	52	n/a	n/a
PIMCO Income Fund	6.5%	0.5%	n/a	n/a
BbgBarc US Aggregate	2.9%	8.7%	n/a	n/a
Rank vs. Multi-Sector Fixed Income Port	76	66	n/a	n/a
PIMCO Inv Grade Corp Bond	8.6%	6.2%	n/a	n/a
BbgBarc US Credit	8.2%	9.1%	n/a	n/a
Rank vs. Multi-Sector Fixed Income Port	46	12	n/a	n/a

Release date 06-30-2020

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Dodge & Cox Income (USD)

Morningstar Analyst Rating™



11-07-2019

Overall Morningstar Rating™

534 US Fund Intermediate
Core-Plus Bond

Standard Index

BBgBarc US Agg
Bond TR USD

Category Index

BBgBarc US
Universal TR USD

Morningstar Cat

US Fund Intermediate
Core-Plus Bond

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.90	-0.33	0.64	0.29	-0.31
2019	3.70	2.79	2.09	0.85	9.73
2020	-0.70	5.98	—	—	5.24
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	8.35	5.37	4.74	4.52	6.72
Std 06-30-2020	8.35	—	4.74	4.52	6.72
Total Return	8.35	5.37	4.74	4.52	6.72
+/- Std Index	-0.39	0.05	0.43	0.70	—
+/- Cat Index	0.46	0.21	0.31	0.41	—
% Rank Cat	23	18	10	26	—
No. in Cat	601	534	455	333	—

	Subsidized	Unsubsidized
7-day Yield	—	—
30-day SEC Yield	—	—

Performance Disclosure

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Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.40

12b1 Expense %

NA

Gross Expense Ratio %

0.42

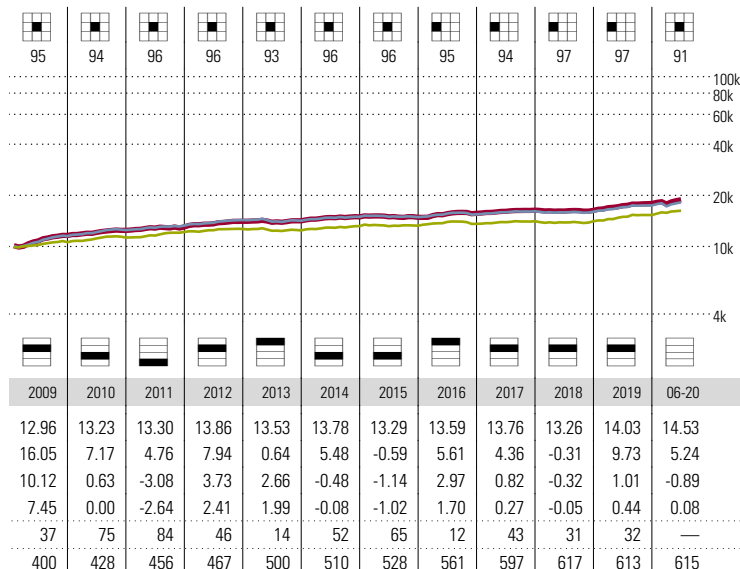
Risk and Return Profile

	3 Yr	5 Yr	10 Yr
Morningstar Rating™	4★	5★	4★
Morningstar Risk	-Avg	-Avg	Low
Morningstar Return	+Avg	High	+Avg

	3 Yr	5 Yr	10 Yr
Standard Deviation	3.44	3.21	2.88
Mean	5.37	4.74	4.52
Sharpe Ratio	1.05	1.10	1.34

MPT Statistics	Standard Index	Best Fit Index
Alpha	0.83	1.14
Beta	0.78	0.55
R-Squared	54.48	96.08

12-Month Yield	—
Potential Cap Gains Exp	4.01%



Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 03-2020	Share Amount	Holdings : 0 Total Stocks , 3,038 Total Fixed-Income, 49% Turnover Ratio	Net Assets %
Cash	6.28	6.28	0.00	—	—	United States Treasury Notes 0.12%	3.21
US Stocks	0.00	0.00	0.00	—	—	United States Treasury Notes 0.38%	2.25
Non-US Stocks	0.00	0.00	0.00	—	—	Federal National Mortgage Associat	1.54
Bonds	91.10	91.10	0.00	—	—	United States Treasury Bills	1.49
Other/Not Clsfd	2.62	2.62	0.00	—	—	United States Treasury Notes 0.12%	1.14
Total	100.00	100.00	0.00	—	—	Imperial Brands Finance Plc 4.25%	0.95
				—	—	Wells Fargo & Company 5.01%	0.94
				—	—	Charter Communications Operating,	0.91
				—	—	Citigroup Capital XIII Floating Ra	0.68
				—	—	JPMorgan Chase & Co. 4.49%	0.67
				—	—	Bank of America Corporation 3%	0.66
				—	—	United States Treasury Notes 0.62%	0.64
				—	—	Bank of America Corporation 4.08%	0.63
				—	—	BNP Paribas 4.25%	0.63
				—	—	AbbVie Inc. 4.25%	0.61

Equity Style

Value Blend Growth

P/E Ratio TTM

P/C Ratio TTM

P/B Ratio TTM

Geo Avg Mkt Cap \$mil

Avg Eff Maturity

Avg Eff Duration

Avg Wtd Coupon

Avg Wtd Price

Credit Quality Breakdown 06-30-2020

AAA

AA

A

BBB

BB

B

Below B

NR

Regional Exposure

Americas

Greater Europe

Greater Asia

Sector Weightings

Cyclical

Basic Materials

Consumer Cyclical

Financial Services

Real Estate

Sensitive

Communication Services

Energy

Industrials

Technology

Defensive

Consumer Defensive

Healthcare

Utilities

Operations

Family: Dodge & Cox

Manager: Multiple

Tenure: 31.6 Years

Objective: Income

Base Currency: USD

Ticker:

DODIX

ISIN:

US2562101053

Minimum Initial Purchase:

\$2,500

Minimum IRA Purchase:

\$1,000

Purchase Constraints:

—

Incept:

01-03-1989

Type:

MF

Total Assets:

\$66,294.20 mil

Release date 06-30-2020

Page 5 of 21

DoubleLine Core Fixed Income I (USD)

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.74	-0.19	0.31	0.60	-0.02
2019	2.96	3.02	1.48	0.32	7.99
2020	-3.29	5.41	—	—	1.94
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	3.78	3.79	3.60	4.94	5.10
Std 06-30-2020	3.78	—	3.60	4.94	5.10
Total Return	3.78	3.79	3.60	4.94	5.10
+/- Std Index	-4.96	-1.53	-0.70	1.12	—
+/- Cat Index	-4.10	-1.37	-0.82	0.83	—
% Rank Cat	90	79	74	12	—
No. in Cat	601	534	455	333	—

	Subsidized	Unsubsidized
7-day Yield	—	—
30-day SEC Yield 07-31-20	2.54	2.48

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate; thus an investor's shares, when sold or redeemed, may be worth more or less than their original cost.

Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 877-354-6311 or visit www.doublinelinefunds.com.

Fees and Expenses

Sales Charges

Front-End Load %	NA
Deferred Load %	NA

Fund Expenses

Management Fees %	0.40
12b1 Expense %	NA
Gross Expense Ratio %	0.48

Risk and Return Profile

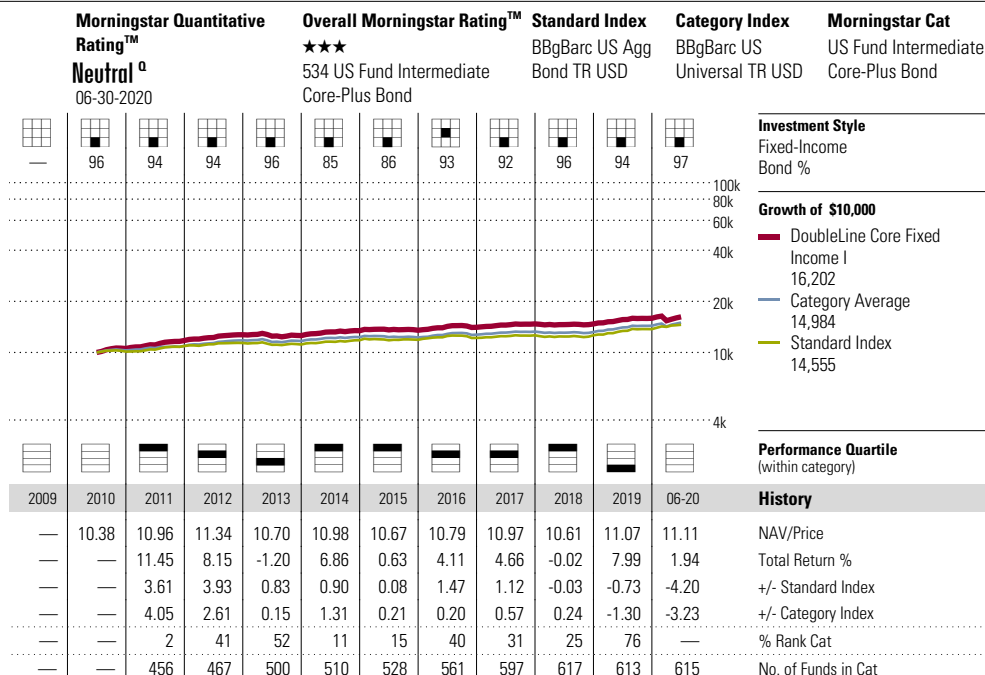
	3 Yr	5 Yr	10 Yr
	534 funds	455 funds	333 funds
Morningstar Rating™	2★	2★	4★
Morningstar Risk	+Avg	+Avg	+Avg
Morningstar Return	-Avg	-Avg	+Avg

	3 Yr	5 Yr	10 Yr
Standard Deviation	4.63	3.94	3.53
Mean	3.79	3.60	4.94
Sharpe Ratio	0.47	0.63	1.21

MPT Statistics	Standard Index	Best Fit Index
	BBgBarc US Credit TR USD	BBgBarc US Credit TR USD
Alpha	-1.13	-1.08
Beta	0.92	0.72
R-Squared	42.36	91.40
12-Month Yield	—	3.25%
Potential Cap Gains Exp	—	-3.22%

Operations

Family:	DoubleLine
Manager:	Multiple
Tenure:	10.2 Years
Objective:	Growth and Income
Base Currency:	USD



Portfolio Analysis 06-30-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 05-2020	Share Amount	Holdings :	Net Assets %
Cash	1.49	1.64	0.15			2 Total Stocks , 2,325 Total Fixed-Income, 43% Turnover Ratio	
US Stocks	0.00	0.00	0.00				
Non-US Stocks	0.00	0.00	0.00	⊖	84 mil	DoubleLine Global Bond I	7.50
Bonds	97.34	97.48	0.14		46 mil	DoubleLine Infrastructure Income I	4.04
Other/Not Clsfd	1.17	1.17	0.00	⊕	275 mil	United States Treasury Notes 0.25%	2.36
Total	100.00	100.29	0.29	⊕	226 mil	United States Treasury Notes 0.25%	1.94
				⊕	193 mil	United States Treasury Notes 0.5%	1.66
				⊕	169 mil	United States Treasury Notes 1.75%	1.48
				⊕	126 mil	United States Treasury Notes 0.13%	1.08
				⊕	126 mil	United States Treasury Notes 0.63%	1.07
				⊖	114 mil	United States Treasury Notes 2.25%	1.06
				⊖	107 mil	United States Treasury Notes 2.25%	1.03
				⊖	111 mil	United States Treasury Notes 2.13%	1.02
				⊖	105 mil	United States Treasury Notes 3%	1.02
				⊖	123 mil	Federal National Mortgage Associat	1.01
				⊖	105 mil	United States Treasury Notes 1.63%	0.96
				⊖	88 mil	United States Treasury Notes 2.25%	0.84

Equity Style	Portfolio Statistics	Port Avg	Rel Index	Rel Cat
Value Blend Growth	P/E Ratio TTM	—	—	—
	P/C Ratio TTM	0.5	—	—
	P/B Ratio TTM	0.3	—	—
	Geo Avg Mkt Cap \$mil	230	—	—
Fixed-Income Style				
Ltd Mod Ext	Avg Eff Maturity	6.78		
	Avg Eff Duration	4.81		
	Avg Wtd Coupon	3.23		
	Avg Wtd Price	101.28		

Credit Quality Breakdown 05-31-2020	Bond %
AAA	45.93
AA	3.52
A	15.73
BBB	16.39
BB	5.92
B	4.24
Below B	2.67
NR	5.60

Regional Exposure	Stocks %	Rel Std Index
Americas	100.0	—
Greater Europe	0.0	—
Greater Asia	0.0	—

Sector Weightings	Stocks %	Rel Std Index
Cyclical	0.0	—
Basic Materials	0.0	—
Consumer Cyclical	0.0	—
Financial Services	0.0	—
Real Estate	0.0	—
Sensitive	100.0	—
Communication Services	0.0	—
Energy	100.0	—
Industrials	0.0	—
Technology	0.0	—
Defensive	0.0	—
Consumer Defensive	0.0	—
Healthcare	0.0	—
Utilities	0.0	—

Release date 06-30-2020

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PIMCO Diversified Inc Instl (USD)

Morningstar Analyst Rating™



Gold

06-12-2020

Overall Morningstar Rating™



283 US Fund Multisector Bond

Standard Index

BBgBarc US Agg Bond TR USD

Category Index

BBgBarc US Universal TR USD

Morningstar Cat

US Fund Multisector Bond

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.64	-0.73	1.66	-1.26	-0.99
2019	5.82	3.59	1.20	1.67	12.78
2020	-7.53	7.19	—	—	-0.88
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	1.98	4.46	5.53	5.90	6.84
Std 06-30-2020	1.98	—	5.53	5.90	6.84
Total Return	1.98	4.46	5.53	5.90	6.84
+/- Std Index	-6.76	-0.86	1.22	2.08	—
+/- Cat Index	-5.91	-0.69	1.11	1.79	—
% Rank Cat	40	12	3	10	—
No. in Cat	321	283	235	128	—

7-day Yield	Subsidized	Unsubsidized
30-day SEC Yield 07-31-20	2.36	2.36

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

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Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 888-877-4626 or visit www.pimco.com.

Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.75

12b1 Expense %

NA

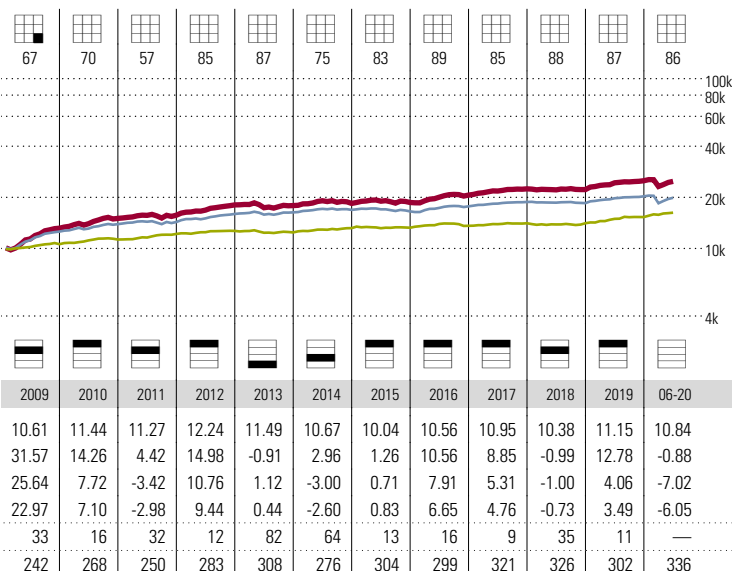
Gross Expense Ratio %

0.79

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	283 funds	235 funds	128 funds
Morningstar Rating™	4★	5★	5★
Morningstar Risk	Avg	Avg	+Avg
Morningstar Return	+Avg	High	High
	3 Yr	5 Yr	10 Yr
Standard Deviation	6.50	5.85	5.59
Mean	4.46	5.53	5.90
Sharpe Ratio	0.45	0.75	0.95

MPT Statistics	Standard Index	Best Fit Index
		JPM EMBI Global Diversified TR USD
Alpha	0.11	1.45
Beta	0.79	0.60
R-Squared	15.61	93.94
12-Month Yield		4.45%
Potential Cap Gains Exp		-8.00%



Investment Style
Fixed-Income
Bond %

Growth of \$10,000

— PIMCO Diversified Inc Instl
24,836
— Category Average
19,879
— Standard Index
16,240

Performance Quartile
(within category)

History

NAV/Price	10.84
Total Return %	-0.88
+/- Standard Index	-7.02
+/- Category Index	-6.05
% Rank Cat	—
No. of Funds in Cat	336

Portfolio Analysis 03-31-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 12-2019	Share Amount	Holdings : 11 Total Stocks , 1,612 Total Fixed-Income, 127% Turnover Ratio	Net Assets %
Cash	-57.65	20.19	77.84				
US Stocks	0.03	0.03	0.00				
Non-US Stocks	0.09	0.09	0.00		144 mil	United States Treasury Notes 1.88%	3.96
Bonds	152.81	156.14	3.33	★	141 mil	Federal National Mortgage Associat	3.94
Other/Not Clsfd	4.71	4.71	0.00		141 mil	United States Treasury Notes 2.12%	3.87
Total	100.00	181.17	81.17	★	115 mil	Federal National Mortgage Associat	3.25
					87 mil	United States Treasury Notes 2.25%	2.53
					78 mil	United States Treasury Notes 2.88%	2.46
					75 mil	United States Treasury Notes 3.12%	2.42
					57 mil	United States Treasury Notes 1.12%	1.55
				★	34 mil	Ultra 10 Year US Treasury Note Fut	1.41
				⊖	53 mil	Indonesia Rep 1%	1.38
				⊖	48 mil	United States Treasury Notes 2.62%	1.37
				★	33 mil	Fin Fut Euro-Bobl 5y Eux 06/08/20	1.31
				★	43 mil	United States Treasury Notes 2%	1.22
				★	22 mil	Fin Fut Eur-Bund 10yr Eux 06/08/20	1.13
					31 mil	United States Treasury Bonds 3.12%	1.12

Equity Style	Portfolio Statistics	Port Avg	Rel Index	Rel Cat
Value Blend Growth	P/E Ratio TTM	—	—	—
	P/C Ratio TTM	—	—	—
	P/B Ratio TTM	—	—	—
	Geo Avg Mkt Cap \$mil	1989	—	0.03

Credit Quality Breakdown —	Bond %
AAA	—

Credit Quality Breakdown —	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure	Stocks %	Rel Std Index
Americas	42.0	—
Greater Europe	58.0	—
Greater Asia	0.0	—

Sector Weightings	Stocks %	Rel Std Index
Cyclical	80.4	—
Basic Materials	0.0	—
Consumer Cyclical	11.5	—
Financial Services	68.9	—
Real Estate	0.0	—
Sensitive	7.1	—
Communication Services	5.9	—
Energy	1.2	—
Industrials	0.0	—
Technology	0.0	—
Defensive	12.5	—
Consumer Defensive	0.0	—
Healthcare	0.0	—
Utilities	12.5	—

Operations

Family:	PIMCO	Base Currency:	USD	Purchase Constraints:	A
Manager:	Multiple	Ticker:	PDIIX	Incept:	07-31-2003
Tenure:	4.4 Years	ISIN:	US6933918806	Type:	MF
Objective:	Income	Minimum Initial Purchase:	\$1 mil	Total Assets:	\$4,670.11 mil

PIMCO Income Instl (USD)

Morningstar Analyst Rating™



05-20-2020

Overall Morningstar Rating™



283 US Fund Multisector Bond

Standard Index

BBgBarc US Agg Bond TR USD

Category Index

BBgBarc US Universal TR USD

Morningstar Cat

US Fund Multisector Bond

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-0.27	-0.44	0.56	0.74	0.58
2019	3.03	2.40	-0.11	2.53	8.05
2020	-7.66	6.48	—	—	-1.68
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	0.69	3.32	4.69	7.51	7.78
Std 06-30-2020	0.69	—	4.69	7.51	7.78
Total Return	0.69	3.32	4.69	7.51	7.78
+/- Std Index	-8.05	-2.01	0.39	3.69	—
+/- Cat Index	-7.19	-1.84	0.27	3.40	—
% Rank Cat	56	34	6	1	—
No. in Cat	321	283	235	128	—

	Subsidized	Unsubsidized
7-day Yield	—	—
30-day SEC Yield 07-31-20	3.03	3.03

Performance Disclosure

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Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.50

12b1 Expense %

NA

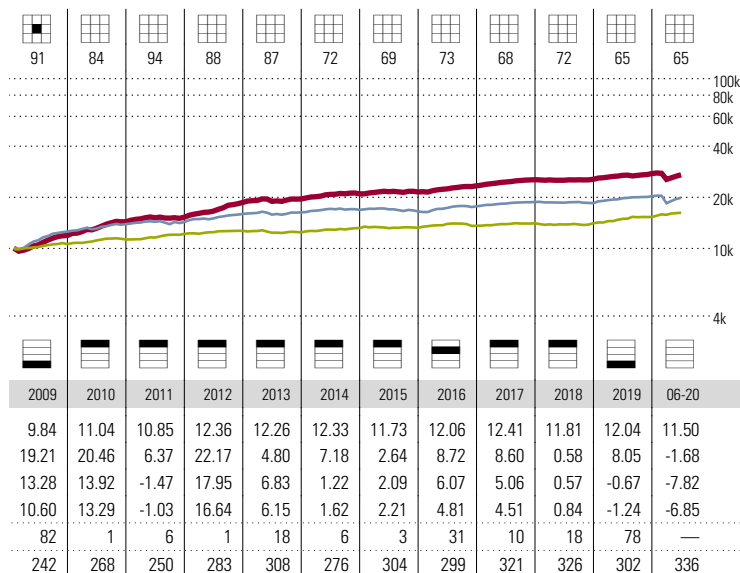
Gross Expense Ratio %

1.09

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	283 funds	235 funds	128 funds
Morningstar Rating™	4★	5★	5★
Morningstar Risk	-Avg	-Avg	-Avg
Morningstar Return	Avg	High	High
	3 Yr	5 Yr	10 Yr
Standard Deviation	5.52	4.54	4.35
Mean	3.32	4.69	7.51
Sharpe Ratio	0.32	0.78	1.54

MPT Statistics	Standard Index	Best Fit Index
		JPM EMBI Global Diversified TR USD
Alpha	0.25	0.55
Beta	0.42	0.49
R-Squared	6.13	86.49
12-Month Yield		6.09%
Potential Cap Gains Exp		-10.10%



Portfolio Analysis 03-31-2020

Asset Allocation %		Net %	Long %	Short %	Share Chg since 12-2019	Share Amount	Holdings :	Net Assets %	
Cash		-26.23	115.55	141.78			15 Total Stocks , 6,877 Total Fixed-Income, 421% Turnover Ratio		
US Stocks		0.40	0.40	0.00					
Non-US Stocks		0.18	0.18	0.00	✱	11,200 mil	Federal National Mortgage Associat	10.28	
Bonds		120.68	225.58	104.91	✱	6,458 mil	Federal National Mortgage Associat	5.84	
Other/Not Clsfd		4.97	4.97	0.00	✱	5,224 mil	Federal National Mortgage Associat	-4.88	
Total		100.00	346.68	246.68	✱	3,908 mil	Federal National Mortgage Associat	-3.65	
					✱	3,790 mil	Federal National Mortgage Associat	3.43	
Equity Style		Portfolio Statistics							
Value	Blend	Growth	Port Avg	Rel Index	Rel Cat				
			—	—	—	⊖	3,818 mil	CSMC TRUST 3.36%	2.98
			—	—	—	⊖	2,042 mil	CSMC TRUST 4.29%	1.74
			—	—	—	⊖	2,160 mil	CSMC TRUST 3.43%	1.70
			—	—	—	✱	1,782 mil	Federal National Mortgage Associat	1.63
			3202	—	0.05	⊕	1,589 mil	United States Treasury Notes 0.25%	1.45
						⊖	1,358 mil	Federal National Mortgage Associat	1.28
						⊖	1,524 mil	CSMC TRUST 3.66%	1.28
						⊖	1,601 mil	CSMC TRUST 2017 3.17%	1.20
						✱	1,111 mil	CHESTER A PLC 1.31%	1.20
						⊖	1,391 mil	LEGACY MORTGAGE ASSET TRUST 4.2%	1.19

Sector Weightings	Stocks %	Rel Std Index
Cyclical	89.4	—
Basic Materials	0.0	—
Consumer Cyclical	15.2	—
Financial Services	38.0	—
Real Estate	36.2	—
Sensitive	10.1	—
Communication Services	10.1	—
Energy	0.0	—
Industrials	0.0	—
Technology	0.0	—
Defensive	0.5	—
Consumer Defensive	0.0	—
Healthcare	0.0	—
Utilities	0.5	—

Operations

Family:	PIMCO	Base Currency:	USD	Purchase Constraints:	A
Manager:	Multiple	Ticker:	PIMIX	Incept:	03-30-2007
Tenure:	13.4 Years	ISIN:	US72201F4900	Type:	MF
Objective:	Multisector Bond	Minimum Initial Purchase:	\$1 mil	Total Assets:	\$122,821.67 mil

Release date 06-30-2020

Page 8 of 21

PIMCO Investment Grade Credit Bond Instl (USD)

Morningstar Analyst Rating™

Silver

09-29-2019

Overall Morningstar Rating™

★★★★

189 US Fund Corporate Bond

Standard Index

BBgBarc US Agg

Bond TR USD

Category Index

BBgBarc US Corp

Bond TR USD

Morningstar Cat

US Fund Corporate

Bond

Performance 06-30-2020

Quarterly Returns	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total %
2018	-1.46	-1.28	0.89	-0.17	-2.02
2019	5.51	4.16	2.97	1.37	14.72
2020	-6.03	8.59	—	—	2.04
Trailing Returns	1 Yr	3 Yr	5 Yr	10 Yr	Incept
Load-adj Mthly	6.52	5.59	5.68	6.30	7.47
Std 06-30-2020	6.52	—	5.68	6.30	7.47
Total Return	6.52	5.59	5.68	6.30	7.47
+/- Std Index	-2.22	0.27	1.37	2.48	—
+/- Cat Index	-2.98	-0.74	-0.15	0.83	—
% Rank Cat	76	57	29	1	—
No. in Cat	214	189	141	90	—

7-day Yield	Subsidized	Unsubsidized
30-day SEC Yield 07-31-20	2.16	2.16

Performance Disclosure

The Overall Morningstar Rating is based on risk-adjusted returns, derived from a weighted average of the three-, five-, and 10-year (if applicable) Morningstar metrics.

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Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 888-877-4626 or visit www.pimco.com.

Fees and Expenses

Sales Charges

Front-End Load %

NA

Deferred Load %

NA

Fund Expenses

Management Fees %

0.50

12b1 Expense %

NA

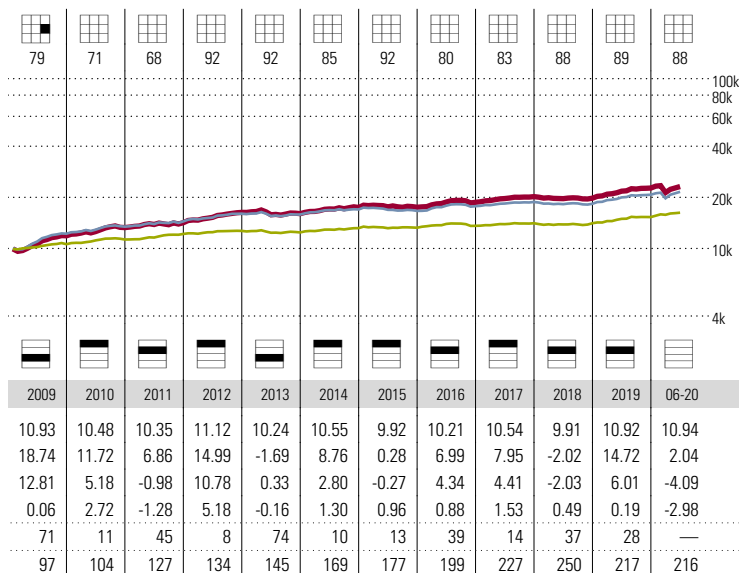
Gross Expense Ratio %

0.85

Risk and Return Profile

	3 Yr	5 Yr	10 Yr
	189 funds	141 funds	90 funds
Morningstar Rating™	3★	3★	5★
Morningstar Risk	Avg	Avg	+Avg
Morningstar Return	Avg	+Avg	High
	3 Yr	5 Yr	10 Yr
Standard Deviation	7.03	5.99	5.43
Mean	5.59	5.68	6.30
Sharpe Ratio	0.57	0.76	1.04

MPT Statistics	Standard Index	Best Fit Index
	BBgBarc US Credit	TR USD
Alpha	-0.77	-1.01
Beta	1.34	1.12
R-Squared	38.96	95.91
12-Month Yield		3.79%
Potential Cap Gains Exp		-2.06%



Portfolio Analysis 03-31-2020

Asset Allocation %	Net %	Long %	Short %	Share Chg since 12-2019	Share Amount	Holdings : 7 Total Stocks , 1,862 Total Fixed-Income, 213% Turnover Ratio	Net Assets %
Cash	-65.59	16.77	82.36				
US Stocks	0.03	0.03	0.00				
Non-US Stocks	0.18	0.18	0.00	★	412 mil	United States Treasury Bonds 2.38%	3.53
Bonds	160.61	166.16	5.54	⊖	322 mil	United States Treasury Bonds 2.88%	3.02
Other/Not Clsfd	4.77	4.77	0.00	⊖	44 mil	Pimco Fds	3.00
Total	100.00	187.91	87.91	★	411 mil	Federal National Mortgage Associat	2.98
				★	238 mil	United States Treasury Bonds 3%	2.28
				★	288 mil	Federal National Mortgage Associat	2.04
				⊖	231 mil	United States Treasury Notes 3.12%	1.92
				★	249 mil	Federal National Mortgage Associat	1.81
				★	244 mil	Federal National Mortgage Associat	1.76
				★	234 mil	Federal National Mortgage Associat	1.71
				⊖	171 mil	United States Treasury Bonds 3.38%	1.68
				★	166 mil	United States Treasury Notes 1.5%	1.23
				★	175 mil	United States Treasury Notes 0.5%	1.21
					118 mil	United States Treasury Notes 2.88%	0.96
					345 mil	The Republic of Peru 8.2%	0.86

Equity Style

Value	Blend	Growth

Portfolio Statistics

P/E Ratio TTM	Port Avg	Rel Index	Rel Cat
	—	—	—
P/C Ratio TTM	—	—	—
P/B Ratio TTM	—	—	—
Geo Avg Mkt Cap \$mil	2688	—	—

Fixed-Income Style

Ltd	Mod	Ext

Credit Quality Breakdown —

	Bond %
AAA	—
AA	—
A	—
BBB	—
BB	—
B	—
Below B	—
NR	—

Regional Exposure

	Stocks %	Rel Std Index
Americas	14.4	—
Greater Europe	84.3	—
Greater Asia	1.4	—

Sector Weightings	Stocks %	Rel Std Index
Cyclical	98.6	—
Basic Materials	0.0	—
Consumer Cyclical	0.0	—
Financial Services	86.9	—
Real Estate	11.7	—
Sensitive	0.0	—
Communication Services	0.0	—
Energy	0.0	—
Industrials	0.0	—
Technology	0.0	—
Defensive	1.4	—
Consumer Defensive	0.0	—
Healthcare	0.0	—
Utilities	1.4	—

Operations

Family:	PIMCO
Manager:	Multiple
Tenure:	17.8 Years
Objective:	Corporate Bond - General

Base Currency:	USD
Ticker:	PIGIX
ISIN:	US7220058165
Minimum Initial Purchase:	\$1 mil

Purchase Constraints:	A
Incept:	04-28-2000
Type:	MF
Total Assets:	\$19,467.91 mil

XIV. POLICY COMPLIANCE - For Discussion Only

A. Investment Objectives: Total Portfolio

Goal	FYTD	1 Year	3 Years	5 Years
Exceed Target Index	✗	✗	✗	n/a
Rank Above Average in Wilshire Public Fund Universe	✓	✓	✗	n/a
Achieve Goal Return of 7.50%	✗	✗	✗	n/a
Standard Deviation relative to Target Index	n/a	n/a	>	n/a

B. Fund Performance Objective

Manager	Exceed Benchmark 3-Year	Exceed Benchmark 4-Year	Exceed Benchmark 5-Year	Risk vs. Benchmark 5-Year
Blackrock Equity Dividend	n/a	n/a	n/a	n/a
Schwab Total Stock Market	n/a	n/a	n/a	n/a
TRowe Price New American Growth	n/a	n/a	n/a	n/a
Vanguard Small Cap Index	n/a	n/a	n/a	n/a
Yacktman Fund	n/a	n/a	n/a	n/a
American Funds EuroPacific Growth	n/a	n/a	n/a	n/a
Dodge & Cox	n/a	n/a	n/a	n/a
Doubleline	n/a	n/a	n/a	n/a
PIMCO Diversified Income	n/a	n/a	n/a	n/a
PIMCO Income	n/a	n/a	n/a	n/a
PIMCO Inv Grade Corp Bond	n/a	n/a	n/a	n/a
American Realty	n/a	n/a	n/a	n/a
TA Realty	n/a	n/a	n/a	n/a

Manager	Rank Above 50 th Percentile 3-Year	Rank Above 50 th Percentile 4-Year	Rank Above 50 th Percentile 5-Year	Rank Above 50 th Percentile 3-Year
Blackrock Equity Dividend	n/a	n/a	n/a	n/a
Schwab Total Stock Market	n/a	n/a	n/a	n/a
TRowe Price New American Growth	n/a	n/a	n/a	n/a
Vanguard Small Cap Index	n/a	n/a	n/a	n/a
Yacktman Fund	n/a	n/a	n/a	n/a
American Funds EuroPacific Growth	n/a	n/a	n/a	n/a
Dodge & Cox	n/a	n/a	n/a	n/a
Doubleline	n/a	n/a	n/a	n/a
PIMCO Diversified Income	n/a	n/a	n/a	n/a
PIMCO Income	n/a	n/a	n/a	n/a
PIMCO Inv Grade Corp Bond	n/a	n/a	n/a	n/a
American Realty	n/a	n/a	n/a	n/a
TA Realty	n/a	n/a	n/a	n/a

C. Plan Fees/Manager Status

Equity Managers	Indirect Fees	Commissions	MS Analyst Rating*	Status	Effective Date
Blackrock Equity Dividend	71	None	Silver	Good Standing	
Schwab Total Stock Market	3	None	Gold	Good Standing	
TRowe Price New America Growth	78	None	Silver	Good Standing	
Vanguard Small Cap Index	5	None	Gold	Good Standing	
Yacktman Fund	75	None	Gold	Good Standing	
American Funds EuroPacific Growth	49	None	Gold	Good Standing	
Fixed Income Managers	Indirect Fees				
Dodge & Cox Income Fund	42	None	Gold	Good Standing	
Doubleline Core Fixed Income	48	None	Neutral	Good Standing	
PIMCO Diversified Income	79	None	Silver	Good Standing	
PIMCO Income	50	None	Silver	Good Standing	
PIMCO Inv Grade Corp Bond	50	None	Silver	Good Standing	
Real Estate Managers	Direct Fees				
American Realty (Value Add)	125	None		Good Standing	
TA Realty (Core)	70	None		Good Standing	
Asset Consulting	Direct Fees				
Southeastern Advisory Services	10	None			
Custody	Direct Fees				
Salem Trust	4	None			

* Morningstar analyst ratings are Gold, Silver, Bronze, Neutral and Negative.

** All fees shown are in basis points. For asset managers in mutual fund structure, the fee shown is the expense ratio. The expense ratio is an implicit fee incurred by each mutual fund. Mutual fund performances are "NET" and shown after the expense ratio. The real estate managers are in commingled fund structure and their fee is quarterly and deducted from their capital account. Southeastern Reports the real estate manager's gross and net returns in section X. Southeastern charges a fee of 10 basis points which is paid quarterly. Salem Trust charges a fee of 4 basis points for custody which is paid quarterly. Page 8 calculates the net of fee returns for the total plan and includes all explicit fees charged by asset managers.

D. Annual Fee Estimate as of June 30, 2020*

Asset Manager	Estimated Annual Basis Point Fee	Estimated Annual Dollar Fee	Fee Schedule
Blackrock Equity Dividend (\$4.1M)	71 bp	\$29k	0.71%
Schwab Total Stock Market (\$5.8M)	3 bp	\$2k	0.03%
TRowe Price New America Growth (\$5.5M)	78 bp	\$43k	0.79%
Vanguard Small Cap Index (\$4.0M)	5 bp	\$2k	0.05%
Yacktman Fund (\$4.1M)	75 bp	\$31k	0.75%
American Funds Europacific Growth (\$4.4M)	49 bp	\$22k	0.49%
Dodge and Cox Income Fund (\$1.8M)	42 bp	\$8k	0.42%
Doubleline Core Fixed Income (\$1.7M)	48 bp	\$8k	0.48%
PIMCO Diversified Income (\$1.8M)	75 bp	\$14k	0.75%
PIMCO Income (\$1.8M)	50 bp	\$9k	0.50%
PIMCO Inv Grade Corp Bond (\$2.0M)	50 bp	\$10k	0.50%
American Realty (Value Add) (\$0.9M)	125 bp	\$11k	1.25%
TA Realty (\$2.6M)	70 bp	\$18k	0.70%
Total Fee on All Assets (\$40.6M)	51 bp	\$207k	N/A

Fee Summary	Estimated Annual Basis Point Fee	Estimated Annual Dollar Fee
Total Indirect Fees to Asset Managers (Mutual Funds)	44 bp	\$178k
Total Direct Fees to Asset Managers (TA/American)	7 bp	\$29k
Total Direct Fees for Consulting and Custody (\$40.6M)	14 bp	\$57k
Total Fees (Direct and Indirect) (\$40.6M)	65 bp	\$264k

* The fee estimate in table D is based on the year-end total portfolio value and shows basis points and dollar fees across all managers. Mutual fund manager fees are indirect (all investment returns net of fees). The board only pays direct fees to the real estate managers (American / TA) and direct fees for Custody (Salem Trust) and Consulting (Southeastern).

XV. NOTES

- SEAS is retained as the general investment consultant effective 9/1/18.
- SEAS downloaded monthly custody statements going back to 10/1/2015 to independently calculate and verify the historical returns of the total composite portfolio, total equity portfolio, specialty portfolio and fixed income portfolio. For returns of individual portfolios within these categories, SEAS relied on manager-reported returns.
- Westwood terminated for fixed income management effective 1/31/19.
- Dodge & Cox Income Fund was funded 2/8/19.
- Doubleline Core Fixed Income was funded 2/8/19.
- PIMCO Diversified Income was funded 2/8/19.
- PIMCO Income was funded 2/8/19.
- PIMCO Inv Grade Corp Bond Fund was funded 2/8/19.
- Blackrock Equity Dividend was funded on 4/9/19.
- Schwab Total Stock Market was funded on 4/9/19.
- TRowe Price New America Growth was funded on 4/9/19.
- Vanguard Small Cap Index was funded on 4/9/19.
- Yacktman was funded on 4/9/2019.
- American Funds EuroPacific Growth was funded on 4/9/19.
- American Realty (Value Add) was partially funded on 4/25/19.
- TA Realty (Core) was fully funded on 7/1/19.

SOUTHEASTERN ADVISORY SERVICES, INC.

Registered Investment Advisor



Odessa Firefighters' Relief & Retirement Fund

Asset Allocation Study

Jeffrey D. Swanson, CIMA

Senior Investment Consultant

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February 27, 2020

3495 Piedmont Road, NE Bldg 12-202
Atlanta, Georgia 30305

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Tab 1	Current Target Index / AA
Tab 2	Forecasting Considerations & Constraints
Tab 3	Scenario Modeling / Stress Testing
Tab 4	Summary & Recommendations



Purpose

- Understand 2019 performance, target index and risk allocations.
- Is the return assumption appropriate given cash flows?
- Is the target index appropriate to achieve the return assumption?
- Stress testing and loss evaluation. Are the risks acceptable?
- Portfolio optimization. Can the target index be more efficient?
- Additional strategies / asset classes to consider:
 - Absolute Return
 - Preferred Securities
 - Convertible Bond Strategies
 - Emerging Markets Equity



Current (Baseline) Target Index

Recommended by SEAS

- 45% S&P500 / 10% R2500 / 10% EAFE / 10% NCREIF / 25% BCA
- Generally accepted target index – Typical Public Fund
- Consistent with median plan in Wilshire Universe / Investment Metrics
 - 10% EAFE (11% in Wilshire Public Fund Universe – WW was 25%)
 - 25% BCA (25% in Wilshire Public Fund Universe – WW was 17%)
 - 10% Real Estate (9% in Inv Metrics – WW was 0%)
- Illiquid Investments? – Real Estate at 10%



OFRRF Capital Market Assumptions 2020

Odessa Firefighters' Relief & Retirement Fund

2020 Capital Market Assumptions

Asset Class	Expected LT Total Annualized Return	Inflation Assumption	Expected LT Real Return	Target Allocation	Return Contribution
Based on JPM's 2020 Capital Market Assumptions:					
US Large Cap Equity	5.60	2.00	3.60	45%	1.62
US Small / Mid Cap Equity	6.50	2.00	4.50	10%	0.45
International Equity	7.20	2.00	5.20	10%	0.52
U.S. Direct Real Estate	5.80	2.00	3.80	10%	0.38
Absolute Return	4.50	2.00	2.50	0%	0.00
Global Infrastructure	6.00	2.00	4.00	0%	0.00
Prefds/Converts	4.80	2.00	2.80	0%	0.00
US Aggregate Bond	3.10	2.00	1.10	25%	0.28
Total				100%	

Total Expected Real Return (net of Inflation)	3.25
Long-term Inflation Assumption	2.00
Total Expected Return (including Inflation)	5.25

Based on Historical Data :

US Large Cap Equity (40 yrs 10/31/19)	12.15	3.00	9.15	45%	4.12
US Small / Mid Cap Equity (40 yrs 10/31/19)	11.91	3.00	8.91	10%	0.89
International Equity (40 yrs 10/31/19)	9.51	3.00	6.51	10%	0.65
U.S. Direct Real Estate (ODCE)	9.17	3.00	6.17	10%	0.62
Absolute Return (CSH)	5.50	3.00	2.50	0%	0.00
Global Infrastructure (JPM)	7.00	3.00	4.00	0%	0.00
Prefds/Converts (2.80% real return)	5.80	3.00	2.80	0%	0.00
US Aggregate Bond (40 yrs 10/31/19)	7.42	3.00	4.42	25%	1.11
Total				100%	

Total Expected Real Return (net of Inflation)	7.38
Long-term Inflation Assumption	3.00
Total Historical Return (including Inflation)	10.38

Recommended:

US Large Cap Equity	7.60	3.00	4.60	45%	2.07
US Small / Mid Cap Equity	8.00	3.00	5.00	10%	0.50
International Equity	8.20	3.00	5.20	10%	0.52
U.S. Direct Real Estate	7.50	3.00	4.50	10%	0.45
Absolute Return	6.00	3.00	3.00	0%	0.00
Global Infrastructure	7.00	3.00	4.00	0%	0.00
Prefds/Converts (2.80% real return)	5.80	3.00	2.80	0%	0.00
US Aggregate Bond	4.50	3.00	1.50	25%	0.38
Total				100%	

Total Expected Real Return (net of Inflation)	3.92
Long-term Inflation Assumption	3.00
Total Expected Return (including Inflation)	6.92

- Capital Market Assumptions do not consider plan maturity or cash flows.
- 7.0% is an appropriate return assumption assuming positive or breakeven cash flows.
- 6.0% (or below) is an appropriate return assumption given OFRRF specific considerations.



What are others doing?

Assumed Rates of Return Comparison 2020

Fund	Assets	Assumed ROR	2020 CMA	Delta	Notes	Confirmation
1 Atlanta Regional	\$77,000,000	6.35%	6.46%	-0.11%	Goal achieved = 6.35%	Bill Karbon 12/23/19
2 Boynton Beach GE	\$179,988,197	7.20%	7.13%	0.07%	Goal return is 7.0%, reducing by 10 bspts	Pete Strong 12/23/19
3 Cape Coral Fire	\$184,276,732	7.25%	6.94%	0.31%	Looking at assumption each year	Doug Lozen 11/27/19
4 Cape Coral Police	\$176,325,043	7.50%	6.94%	0.56%	Looking at assumption each year	Doug Lozen 11/27/19
5 Coral Springs GE	\$7,951,932 ▲	6.00%	6.30%	-0.30%	Closed plan. Goal achieved = 6.0%	Theora 12/2/19
6 Covington GA	\$48,000,000	6.75%	6.21%	0.54%	Positive Cash Flow	Joe Griffin 1/20/20
7 Davie Fire	\$118,853,069	7.40%	6.92%	0.48%	Moving toward 7.0%	Don Dulaney 12/23/19
8 East Point	\$111,089,784	7.75%	6.78%	0.97%	No action taken	N/A
9 Gainesville GA	\$103,727,499	7.00%	6.47%	0.53%	Goal Achieved. Reassessing in 2020	Malichi 12/23/19
10 Key West Housing	\$11,511,429	7.00%	6.78%	0.22%	Goal achieved. Reassessing in 2020	Brad H 12/23/19
11 Lauderhill Confid	\$29,357,242	7.25%	6.92%	0.33%	Moving toward 7.0%	Don Dulaney 12/23/19
12 Lauderhill GE	\$26,704,357	7.00%	6.78%	0.22%	Rewiewing furter reduction	M, Moskovitz 12/26/19
13 Lauderhill Police	\$71,318,960	7.25%	7.09%	0.16%	Moving toward 7.0%	Don Dulaney 12/2/19
14 Miramar Police	\$176,718,129	7.25%	7.11%	0.14%	Moving toward 7.0%	Don Dulaney 12/23/19
15 Pompano GE	\$191,578,055	7.55%	7.12%	0.43%	Just reduced, moving towards 7.0%	Madelene K 12/23/19
16 Port Orange GE	\$35,160,836 ▲	7.00%	6.91%	0.09%	Closed plan. Goal return is 6.0%	Pension mtg 12/16/19
17 Odessa Fire	\$44,457,279 ▲	7.50%	6.92%	0.58%	Negative cash flow. Lowered for 2020	Jill Jones 11/27/19
18 Riviera Beach Fire	\$91,489,299 ▲	6.70%	7.10%	-0.40%	Goal return is 6.5%, reducing by 10 bspts	Pete Strong 12/23/19
19 St. Augustine GE	\$42,735,063	7.50%	7.10%	0.40%	Moving toward 7.0%	Mike T 12/23/19
20 St. Augustine Police	\$20,674,340	7.50%	7.10%	0.40%	Moving toward 7.0%	Mike T 12/23/19
Average		7.14%	6.85%	0.28%		

State* / Corporate Comparison**

Florida Retirement System	7.20%
Georgia Employees' Retirement System	7.40%
Texas Employees' Retirement System	7.50%
Public Fund Average (National)	7.30%
Corporate DB Average (2019)	6.60%



Forecasting Considerations & Constraints

General Considerations

- Strategic, long-term assumptions 10-30+ years
- Assumed Rate of Return and building block methodology
- Liabilities and cash flows
- Time horizon and ability to take on active risk
- All outputs are dependent on assumptions / risk bands
- Investibility of asset classes, managers and manager selection

Specific Considerations

- Depletion in 16 years (or longer)
- Ability to meet cash outflows in bear markets
- Illiquid investments (now 10%)
- Assumed rate of return
- City's contribution going forward



Forecasting Considerations & Constraints

OFRRF Recommendations

- Assume the sponsor acts responsibly with future funding solution(s)
- Stay with liquid assets & strategies due to outflows
- Consider new asset classes that may reduce expected risk
- Avoid tendency for “over diversification”
- Avoid selecting a specific “mix” –v- seeing directional value in asset shifts



Forecasting Considerations & Constraints

Recommended Model Constraints

Asset Class	Min	Max	Current
Large Cap Equity	25.00%	50.00%	45%
SMID Cap Equity	5.00%	15.00%	10%
Intl Equity	5.00%	15.00%	10%
Emerging Mkts	0.00%	15.00%	0%
US Fixed Income	15.00%	30.00%	25%
Real Estate	10.00%	15.00%	10%
Absolute Return	0.00%	15.00%	0%
Cash & Equivalents	0.00%	0.00%	0%
Pref/Conv	0.00%	15.00%	0%
*Large Cap Equity + SMID Cap Equity + Intl Equity + Emrg Mkt (defined as "Equity") capped at 70%.			
** Intl Equity + Emerging Mkts (defined as Intl Equity) capped at 15%			
Risk Free Rate:	2.00%		
Market Return:	8.00%		
Inflation Rate:	3.00%		
Investment Horizon:	30 yrs	(VAR stats @ 10-yr)	



APPENDIX

CORRELATION MATRIX

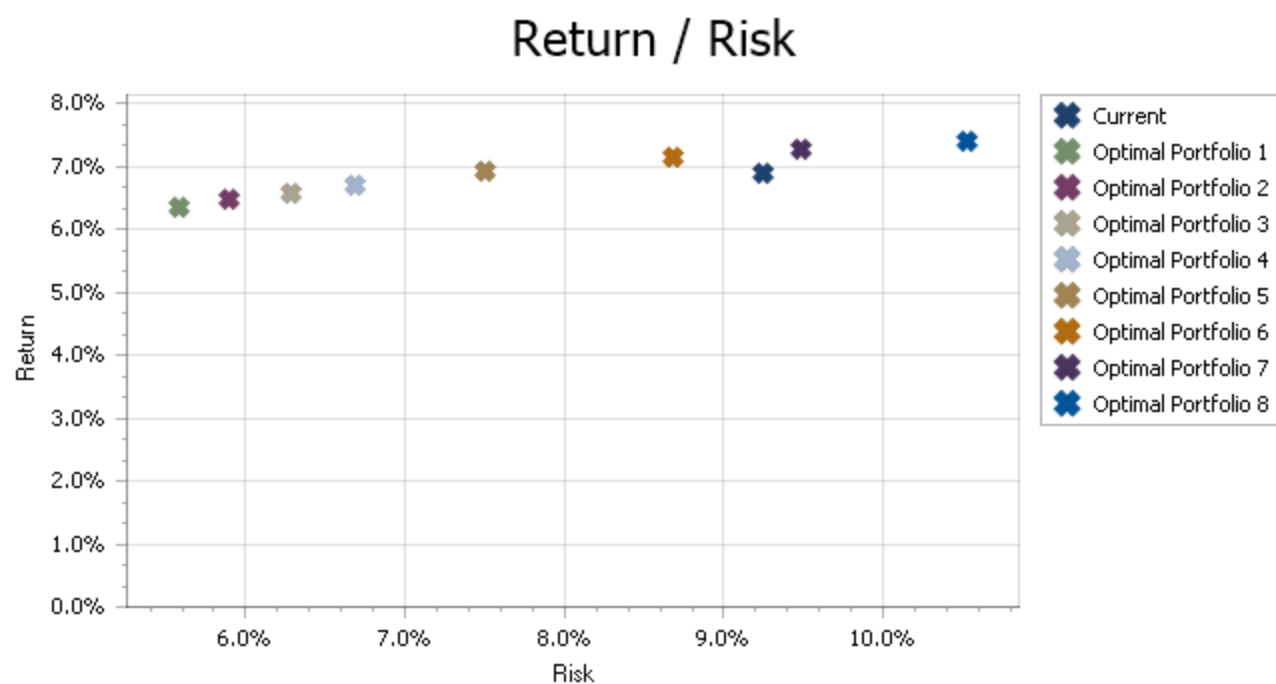
Name	A	B	C	D	E	F	G	H	I
A	1.00								
B	0.93	1.00							
C	0.87	0.82	1.00						
D	0.78	0.76	0.86	1.00					
E	-0.12	-0.13	-0.01	0.04	1.00				
F	-0.09	-0.10	-0.04	-0.08	-0.19	1.00			
G	0.04	0.05	0.05	0.06	-0.18	0.07	1.00		
H	-0.10	-0.08	-0.04	0.04	0.08	0.10	0.12	1.00	
I	0.04	0.05	0.05	0.06	-0.18	0.07	1.00	0.12	1.00

Asset Class Key

A Large Cap Equity
 B SMID Cap Equity
 C Intl Equity
 D Emerging Mkts
 E US Fixed Inc
 F Real Estate
 G Absolute Return
 H Cash
 I Pref/Conv

APPENDIX

EXPECTED RETURN AND RISK



Expected Return and Risk

	Return ¹	Risk ²
Large Cap Equity	7.60%	13.43%
SMID Cap Equity	8.00%	18.95%
Intl Equity	8.20%	16.81%
Emerging Mkts	9.50%	21.12%
US Fixed Inc	4.50%	3.42%
Real Estate	7.50%	11.07%
Absolute Return	6.00%	11.05%
Cash	1.50%	0.47%
Pref/Conv	5.80%	10.85%
Current	6.92%	9.24%
Optimal Portfolio 1	6.36%	5.58%
Optimal Portfolio 2	6.47%	5.90%
Optimal Portfolio 3	6.59%	6.28%
Optimal Portfolio 4	6.70%	6.68%
Optimal Portfolio 5	6.94%	7.50%

Optimal Portfolio 6	7.17%	8.67%
Optimal Portfolio 7	7.28%	9.48%
Optimal Portfolio 8	7.40%	10.52%

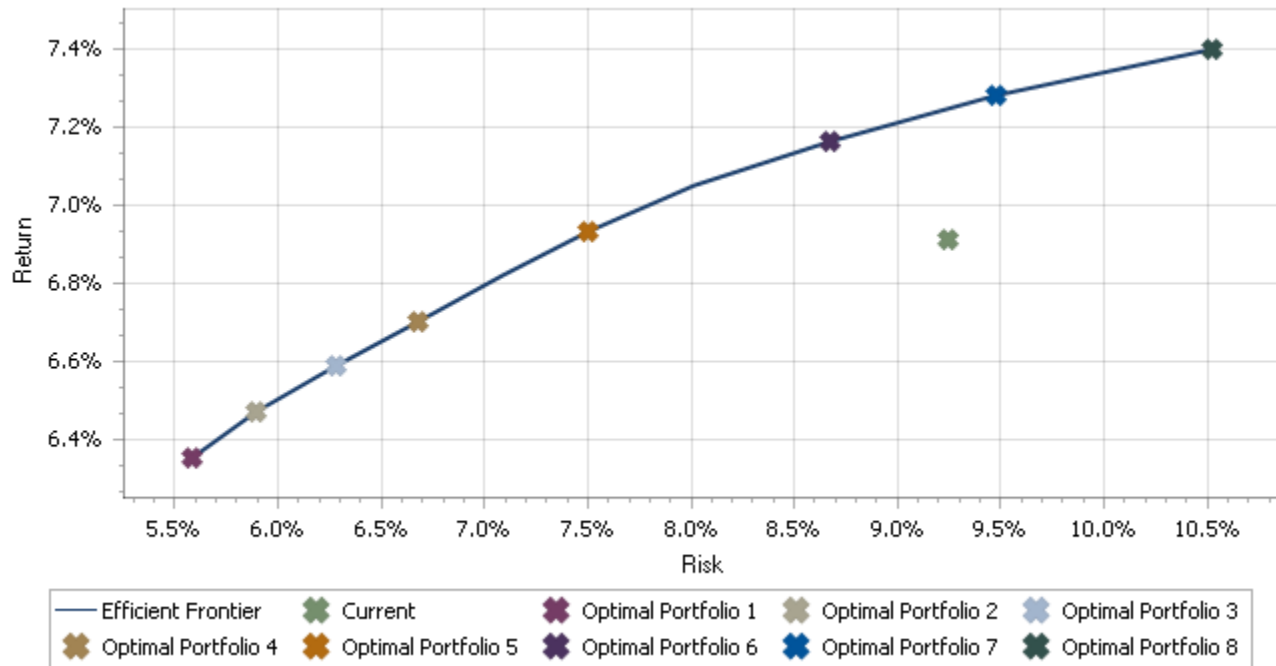
¹Expected annualized return

²Expected annualized standard deviations

PORTFOLIO SUMMARY

EFFICIENT FRONTIER

The expected return and risk of the portfolios are plotted below, along with a curve called the efficient frontier, which represents a continuum of alternative portfolios offering the highest expected return for a given level of risk.



Portfolio Return and Risk

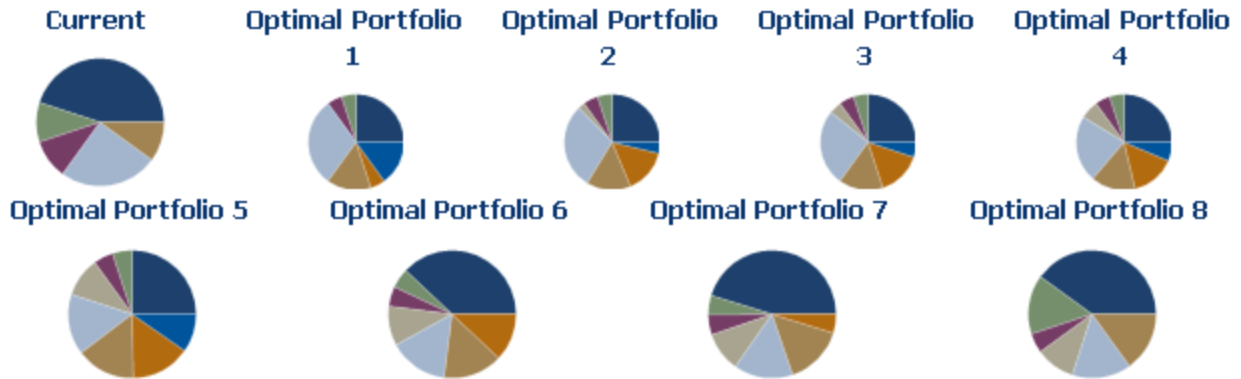
	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
Return ¹	6.92%	6.36%	6.47%	6.59%	6.70%	6.94%	7.17%	7.28%	7.40%
Risk ²	9.24%	5.58%	5.90%	6.28%	6.68%	7.50%	8.67%	9.48%	10.52%

¹Expected annualized return

²Expected annualized standard deviations

PORTFOLIO SUMMARY

ASSET ALLOCATION



Portfolio Allocations

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
Large Cap Equity	45.00%	25.00%	25.00%	25.00%	25.00%	25.00%	37.99%	45.24%	40.00%
SMID Cap Equity	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	15.00%
Intl Equity	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Emerging Mkts	0.00%	0.00%	2.26%	4.24%	6.23%	10.00%	10.00%	10.00%	10.00%
US Fixed Inc	25.00%	30.00%	29.03%	25.75%	22.47%	15.34%	15.00%	15.00%	15.00%
Real Estate	10.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Absolute Return	0.00%	5.00%	15.00%	15.00%	15.00%	15.00%	12.01%	4.76%	0.00%
Cash	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pref/Conv	0.00%	15.00%	3.71%	5.00%	6.30%	9.66%	0.00%	0.00%	0.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Return ¹	6.92%	6.36%	6.47%	6.59%	6.70%	6.94%	7.17%	7.28%	7.40%
Risk ²	9.24%	5.58%	5.90%	6.28%	6.68%	7.50%	8.67%	9.48%	10.52%
Return/Risk Ratio	0.75	1.14	1.10	1.05	1.00	0.92	0.83	0.77	0.70

Portfolio Value = \$50,000,000

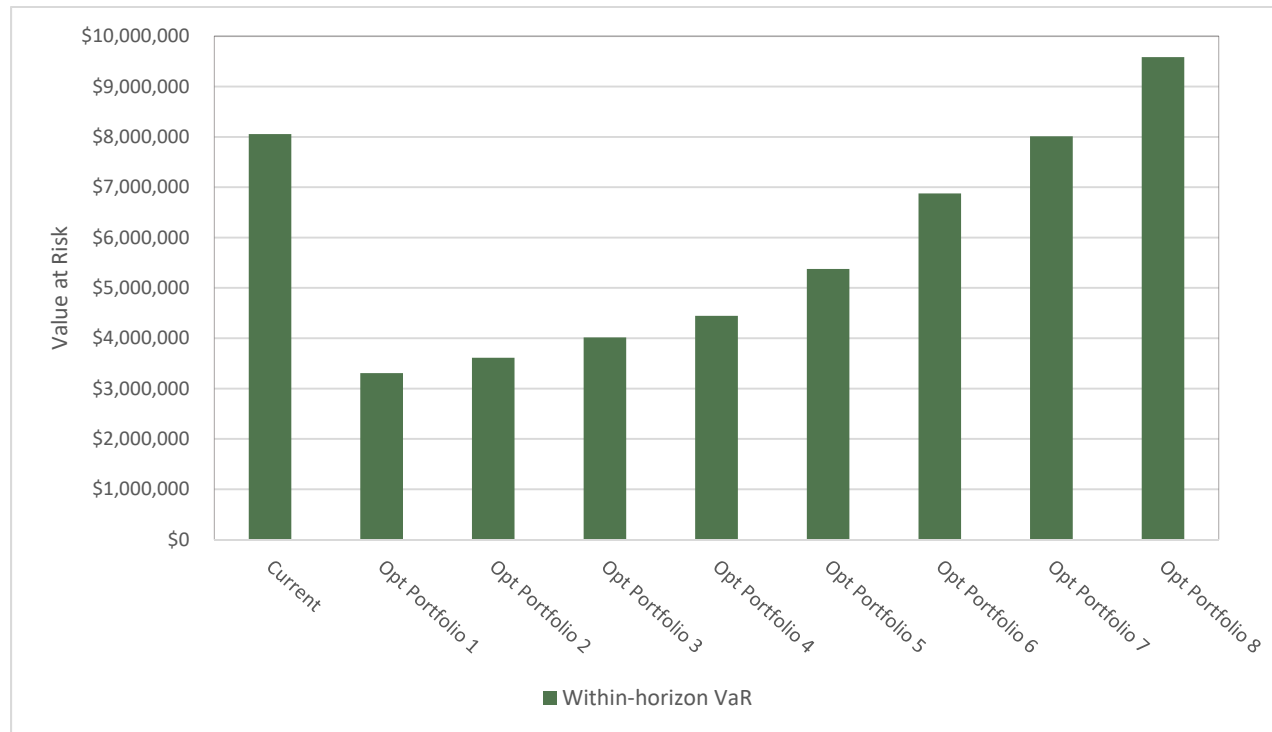
¹Expected annualized return

²Expected annualized standard deviations

EXPOSURE TO LOSS

VALUE AT RISK

Value at risk measured conventionally gives the worst outcome at a chosen probability at the end of an investment horizon. Continuous value at risk gives the worst outcome at a chosen probability from inception to any point throughout an investment horizon. A negative value at risk indicates the expected minimum portfolio gain.



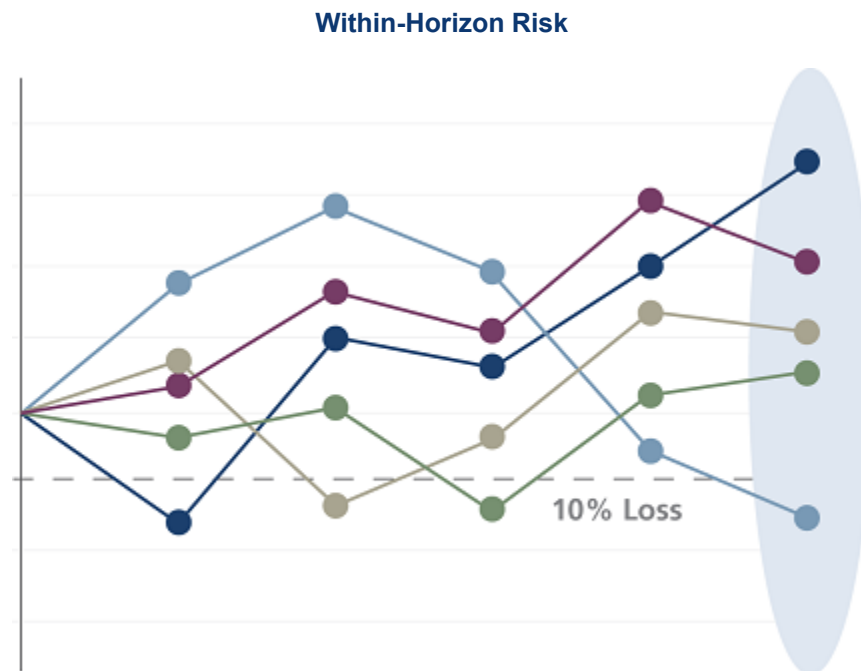
Value at Risk (5%), 10-Year Horizon

	Current	Opt Portfolio 1	Opt Portfolio 2	Opt Portfolio 3	Opt Portfolio 4	Opt Portfolio 5	Opt Portfolio 6	Opt Portfolio 7	Opt Portfolio 8
Within-horizon	\$8,055,738	\$3,307,786	\$3,611,480	\$4,016,111	\$4,446,134	\$5,375,108	\$6,876,548	\$8,012,681	\$9,583,706

EXPOSURE TO LOSS

WITHIN HORIZON RISK

Asset returns vary throughout an investment time-horizon. Conventional probability of loss only estimates total loss at the end of an investment horizon without accounting for an asset's losses from the investment inception to end. The conventional approach to risk measurement ignores intolerable losses that might occur throughout an investment period. An investor therefore would be interested in knowing the probability of a certain level of loss at any given moment during the horizon.

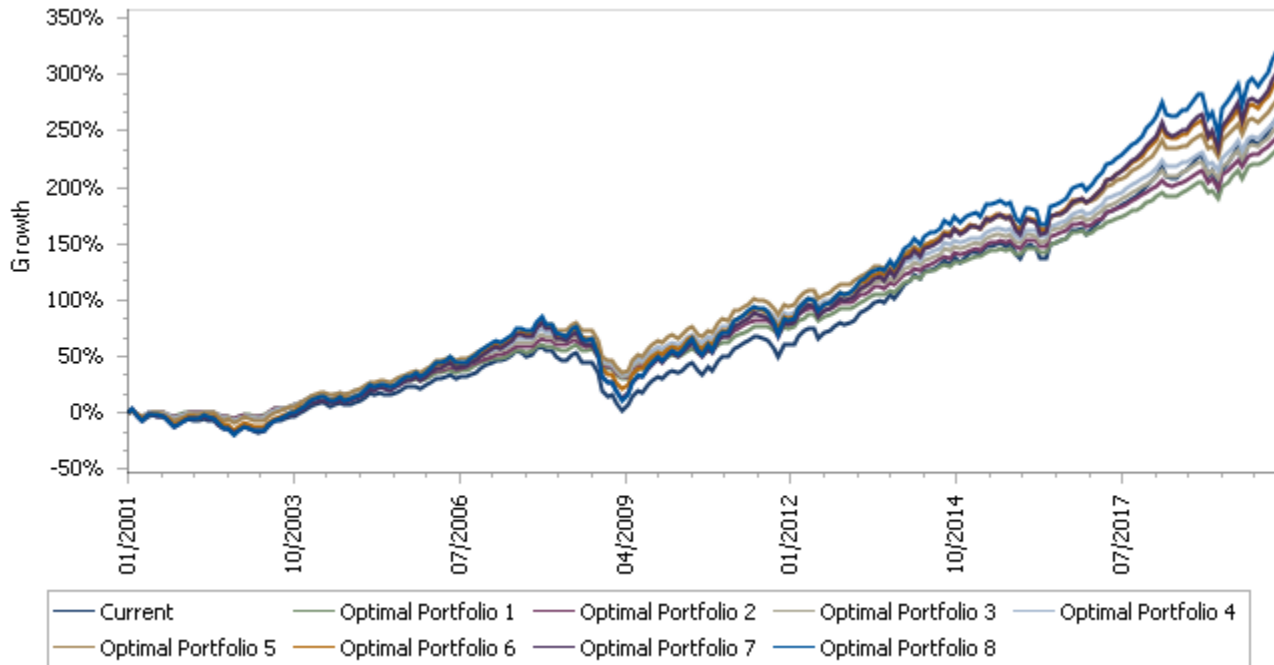


The likelihood of an end-of-horizon loss diminishes with time; the likelihood of a within-horizon loss never diminishes as a function of the length of the horizon (It increases at a decreasing rate but never decreases). Only the first breach in the threshold is counted; once a path crosses the threshold line it counts toward the probability of the investment breaching the threshold within the time-horizon.

HISTORICAL PERFORMANCE

CUMULATIVE GROWTH

Cumulative growth shows the cumulative percentage change in value of the portfolio from 01/2001 through 12/2019.



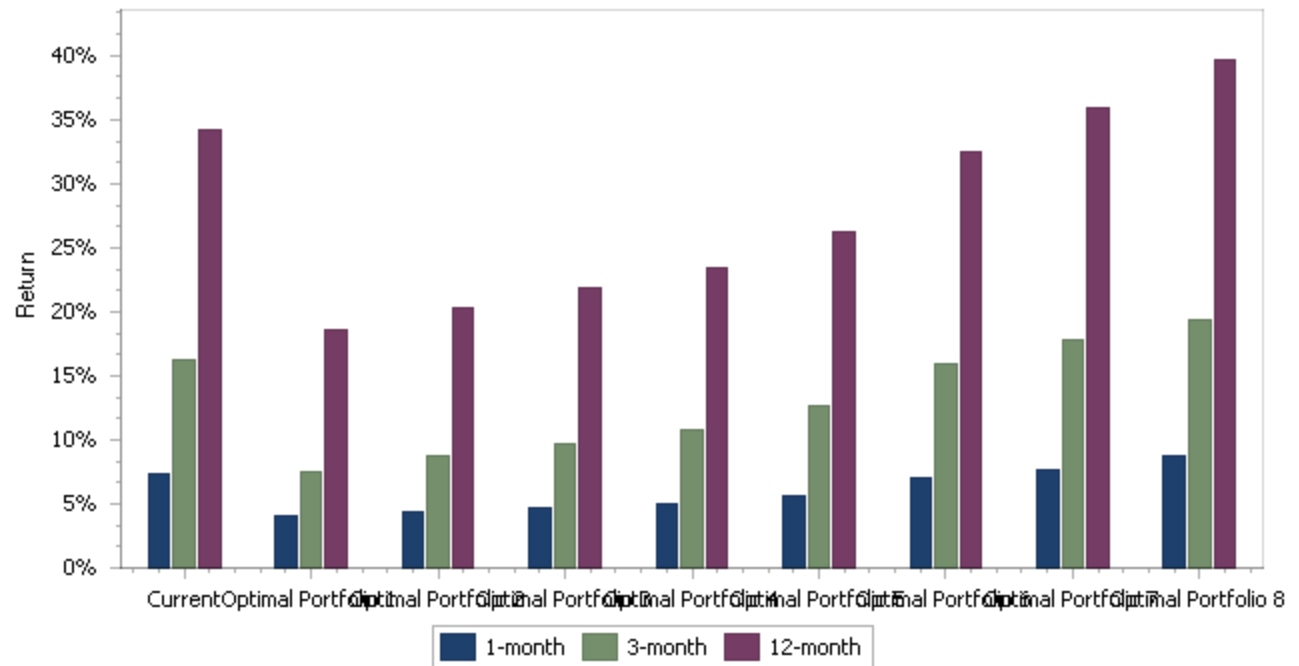
These results represent simulated performance or past performance and are not indicative of future results.

Historical Performance (01/2001 - 12/2019)

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
Cumulative Return	263.44%	234.23%	245.32%	253.98%	262.62%	278.97%	297.05%	304.58%	322.87%
Annualized Return	7.03%	6.56%	6.74%	6.88%	7.01%	7.26%	7.53%	7.63%	7.88%
Annualized Risk	10.01%	5.29%	5.71%	6.09%	6.48%	7.26%	9.22%	10.36%	11.40%

HISTORICAL PERFORMANCE

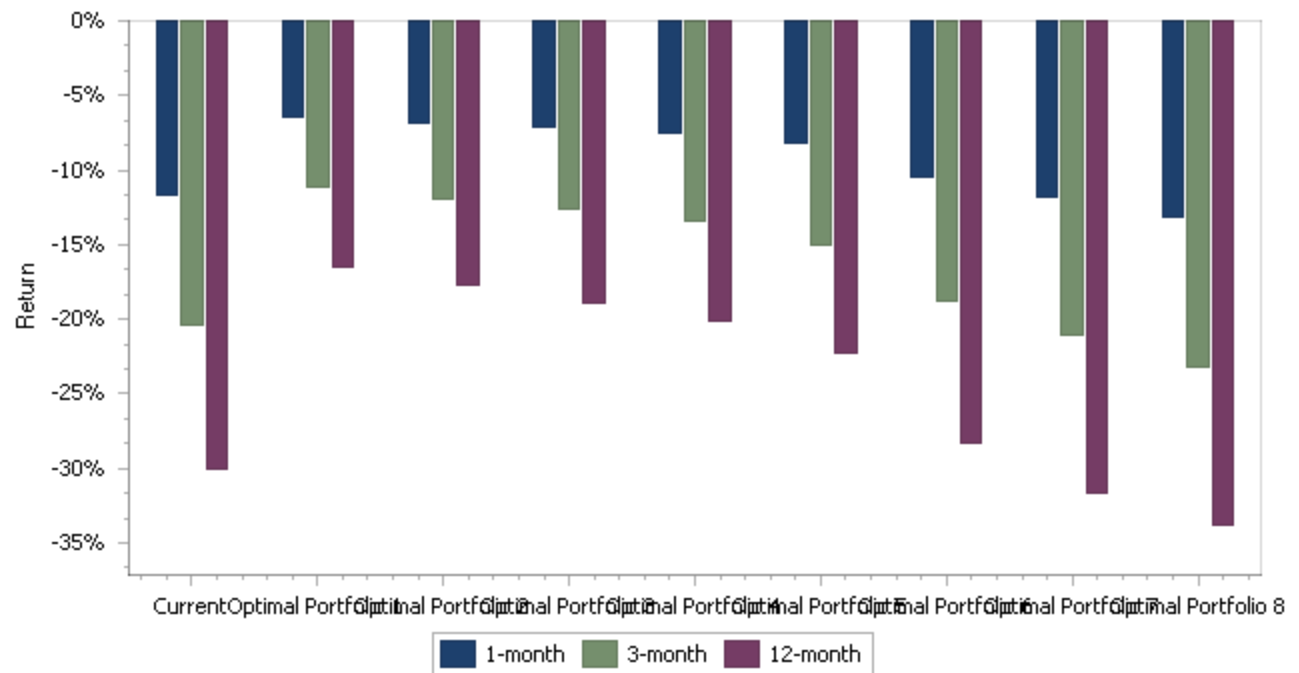
BEST PERIODS



Best Periods (01/2001 - 12/2019)

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
1-month	7.29%	4.08%	4.35%	4.69%	5.03%	5.68%	6.97%	7.72%	8.72%
3-month	16.18%	7.53%	8.71%	9.71%	10.72%	12.63%	15.88%	17.77%	19.35%
12-month	34.26%	18.65%	20.38%	21.90%	23.42%	26.28%	32.42%	35.95%	39.60%

WORST PERIODS



The worst performance over any rolling 1, 3, or 12 month period throughout the historical period.

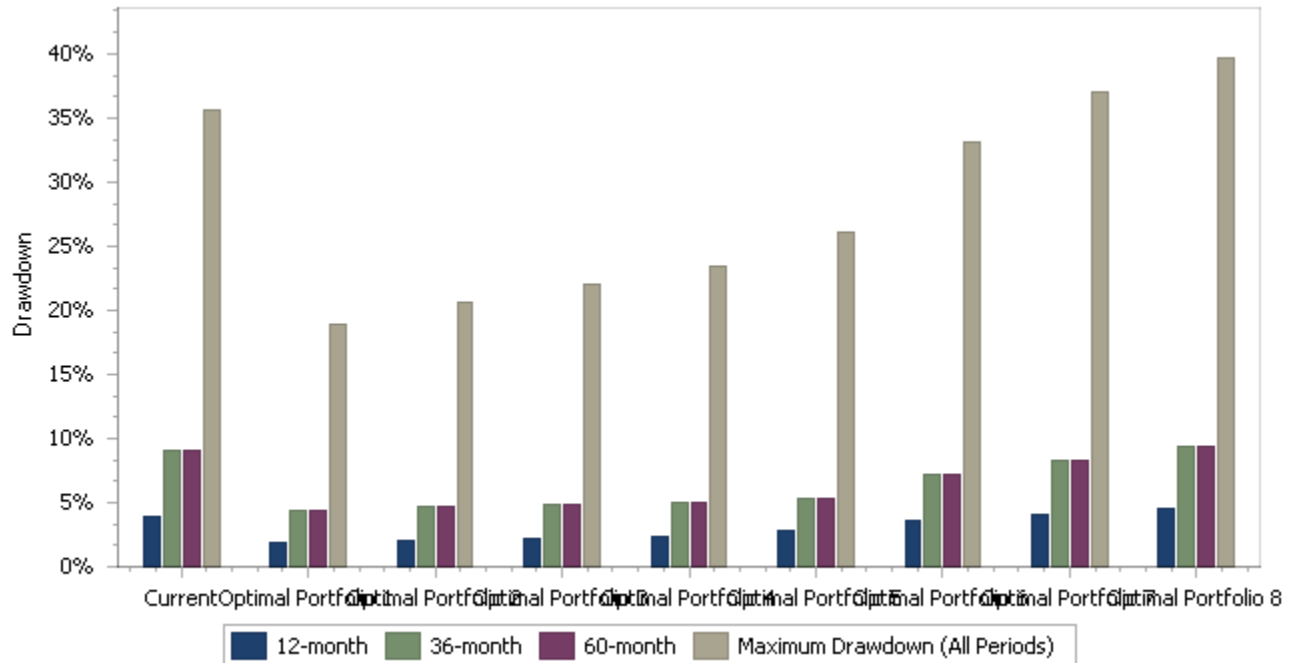
Worst Periods (01/2001 - 12/2019)

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
1-month	-11.70%	-6.37%	-6.82%	-7.17%	-7.53%	-8.20%	-10.46%	-11.81%	-13.16%
3-month	-20.38%	-11.07%	-11.89%	-12.67%	-13.46%	-14.98%	-18.81%	-21.03%	-23.20%
12-month	-30.07%	-16.45%	-17.76%	-18.92%	-20.07%	-22.26%	-28.27%	-31.59%	-33.77%

HISTORICAL PERFORMANCE

MAXIMUM DRAWDOWN

Maximum drawdown is the maximum peak to trough loss experienced during the past 12 months, 36 months, 60 months, or since the beginning of historical period.

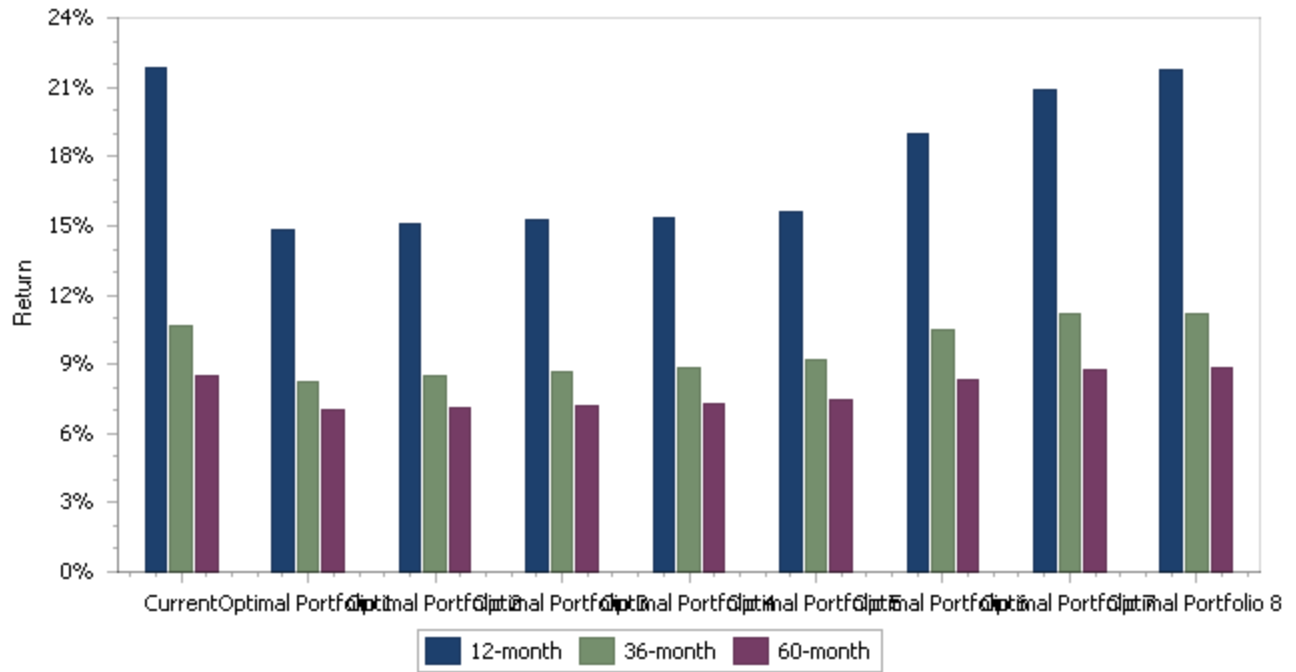


Maximum Drawdowns (01/2001 - 12/2019)

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
12-month	3.86%	1.80%	1.99%	2.19%	2.38%	2.76%	3.65%	4.14%	4.53%
36-month	9.03%	4.45%	4.61%	4.80%	4.98%	5.33%	7.21%	8.26%	9.42%
60-month	9.03%	4.45%	4.61%	4.80%	4.98%	5.33%	7.21%	8.26%	9.42%
Maximum Drawdown (All Periods)	35.53%	18.94%	20.53%	21.96%	23.38%	26.03%	33.18%	37.02%	39.61%

HISTORICAL PERFORMANCE

TRAILING RETURNS



Trailing Returns (Annualized, 01/2001 - 12/2019)

	Current	Optimal Portfolio 1	Optimal Portfolio 2	Optimal Portfolio 3	Optimal Portfolio 4	Optimal Portfolio 5	Optimal Portfolio 6	Optimal Portfolio 7	Optimal Portfolio 8
12-month	21.83%	14.81%	15.09%	15.24%	15.39%	15.63%	19.03%	20.92%	21.79%
36-month	10.69%	8.27%	8.47%	8.66%	8.84%	9.20%	10.49%	11.18%	11.16%
60-month	8.46%	6.99%	7.07%	7.17%	7.26%	7.45%	8.32%	8.78%	8.83%

Portfolio Optimization / Stress Testing

Findings

- 7.5% goal return is not achievable given the model restraints (7.4% max)
- VAR of current target index is \$8MM (16% loss of assets)
- Mix #7 has the same VAR but shows a higher expected return (7.3%)
 - Includes new 10% emerging markets allocation
 - Includes new 5% absolute return allocation
 - Includes increasing real estate to 15%
 - Includes reducing bonds to 15%
- Optimal portfolio #8 gets OFRRF closest to the goal return (7.4% -v- 7.5%)
 - Increases real estate to 15%
 - Increases international equity to 15% (adding 10% EM)
 - Reduces bonds to 15%
 - Increases expected risk by 14%
- Marginal return and risk are non-linear
 - a 16% increase in return generates 89% increase in expected risk
 - Optimal portfolio #1 (6.36%) -v- Optimal portfolio #8 (7.40%)
- Real estate is maxed out to upper band of 15% in all scenarios
 - IPS allows a maximum of 20% to real estate / 10% target / 7.5% current
 - Negative correlations to most risk buckets in model



Summary

Investment Recommendations

- The current target index was appropriate for the 2019 year
- The current target index is appropriate given the 7.5% goal return
- There is more value in diversification for reduced risk, versus increased returns
- Recommended:
 - 1) 2020 Study the inclusion of an emerging market equity allocation (5%)
 - 2) 2020 Study the inclusion of a convertible / preferred strategy / ASR (10%)
 - 3) Real Estate: Once 10% target is achieved, evaluate increasing to 15% weighting
 - 4) New allocations should be funded from domestic equity to offset risks



Summary

Funding Recommendations

- Assumed rate of return at 7.0% or lower is appropriate
- Experience Study
 - Lump sum contribution –v- pay as you go
 - Historically low interest rate cycle
 - Closer to depletion date, the more costly





ODESSA FIREFIGHTER'S RELIEF AND RETIREMENT FUND

Funding Policy

Funding Objective

Effective December 19, 2019 (the "Effective Date"), the Board of Trustees (the "Board") of Odessa Firemen's Relief and Retirement Fund (the "Fund") adopt this Funding Policy to assist the Fund in meeting the objectives of funding the long-term costs of benefits promised to members over the course of members' careers in an equitable manner and by maintaining intergenerational equity. Pursuant to Texas Government Code Section 802.2011, the Fund will strive to satisfy these objectives by targeting a 100% funded ratio, which is the ratio of the Fund's actuarial value of assets divided by the Fund's actuarial accrued liability. This Funding Policy sets forth the Fund's plan for achieving these objectives.

Current Funding Procedure

The Fund is a defined benefit retirement plan with a fixed-rate contribution. The contribution rates are further established in accordance with Vernon's Texas Civil Statutes, Article 6243e (the "Act"). Effective with the first pay period in January 2020, the member contribution rate is 16.00% of compensation per pay period, and The City of Odessa (the "City") contribution rate is 26.00% of compensation per pay period. Under the Act, the City may change its contribution rate at any time through formal action by its governing body, *provided that* such change does not reduce the City's contribution rate below the minimum rate required by the Act, and the members of the Fund may change the member contribution rate through a majority member vote as recommended by the Board if the Fund's actuary approves the proposed change to the member contribution rate. The Board may not unilaterally change contribution rates, and this Funding Policy reflects such limitation.

This Funding Policy will address how the Fund intends to achieve a 100% funded ratio in accordance with Texas Government Code Section 802.2011 considering the limitations outlined above. This will be accomplished through monitoring of a funding benchmark, as detailed below in this Funding Policy.

Key Actuarial Assumptions/Methods Used for Calculating Amortization Period

Actuarial Cost Method — The Fund utilizes the Entry Age Normal (level percentage of pay) Cost Method.

Actuarial Asset Valuation Method — All assets are valued at market value with an adjustment to uniformly spread investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

Amortization Method — Based on the nature of the Fund's contribution structure, there is no explicit amortization method; instead, the funding period required to amortize any existing Unfunded Actuarial Accrued Liability (UAAL) (such period, the "amortization period") is

determined in conjunction with each actuarial valuation. The amortization period is calculated as the present value of the expected contributions available to fund the UAAL each year, after considering the contributions allocated to fund the normal cost rate.

All other actuarial assumptions and methods used for calculating the amortization period will be identical to those disclosed in the most recent actuarial valuation report. All actuarial assumptions and methods will be reviewed by the Board periodically, as discussed later in this Funding Policy.

Establishment of Funding Benchmark

Since the City and members each contribute to the Fund at a fixed rate, it is imperative that the Board be aware of how these rates compare to a rate that is actuarially determined. In this section, an Actuarially Determined Contribution (ADC) benchmark will be created for comparative purposes only and will be constructed under the actuarial assumptions and methods identical to those disclosed in the most recent actuarial valuation report, except as follows:

Amortization Period — The ADC benchmark will be determined in conjunction with each actuarial valuation by determining the fixed-rate contribution rates that would result in a 30-year amortization period as of the valuation date.

Payroll Growth Assumption — The ADC benchmark will be calculated using a payroll growth assumption that is the lesser of 3.0% and the average payroll growth of the Fire Department of the City over the last 10 years (as reported in the actuarial valuations).

Oversight, Monitoring, and Board Action

As part of its fiduciary duty, the Board will oversee and monitor the ongoing solvency of the Fund and adequacy of the City and member contribution rates. In doing so, the Board will take the following actions or arrange for them to occur:

Actuarial Valuation — The Fund's actuary completes an actuarial valuation of the Fund each year. The report of this valuation is presented to, reviewed, and approved by the Board at a regular meeting. This report is included in the Fund's annual report and provided to the Texas State Pension Review Board (PRB).

Review of Actuarial Assumptions — The Fund's actuary performs an actuarial experience study at least once every five (5) years and presents the results of this study to the Board. This study will identify when the actual experience of the Fund has diverged from adopted assumptions, and in such cases, the Fund's actuary will recommend changes to the actuarial assumptions if any are warranted. The Board will consider the recommended changes to the actuarial assumptions, if any, and the results of the study will be filed with the PRB. The Fund's actuary may also make recommendations with respect to actuarial assumptions for the Board's consideration independent of a formal experience study if warranted.

Review of Funding Policy — The Board will review this Funding Policy periodically, but no less frequently than in connection with any actuarial experience study.

Comparison of Contribution Rates to ADC Benchmark — In conjunction with each actuarial valuation, the Fund's actuary will calculate the ADC benchmark described in this Funding Policy and prepare a comparison of the ADC benchmark with the actual fixed contributions being received by the Fund. The Fund's actuary will utilize the data and assumptions listed in the most recent actuarial valuation report (unless otherwise denoted above) in creating the ADC benchmark.

If, upon comparing the ADC benchmark to the fixed contribution rates, it is determined that the fixed contribution rates have been smaller than the ADC benchmark by more than 2% of payroll in each of the three (3) most recent actuarial valuations, then the Board will:

- 1) Notify the governing body of the City and the member association (if any) of this contribution shortfall and request that they meet to develop a 20-year plan (at the latest) that will establish fixed contribution rates that will result in a 100% funded ratio over a 30-year closed amortization period. The Board will provide all necessary background information to assist all stakeholders in this regard.
- 2) Provide each party with an update as to the progress of their solution relative to the 100% funded ratio goal following completion of each actuarial valuation.

Benefit Changes

While the focus of this Funding Policy is on funding, a reference to how the Board handles benefit changes is also worth noting. As required by the Act, before any changes to benefits or eligibility requirements can be made to the Fund, including, without limitation, the grant of any cost-of-living adjustment, the change must be approved by (1) the Fund's actuary and (2) a majority of the members of the Fund voting by secret ballot. The Board may not unilaterally increase or decrease benefits, grant a cost-of-living adjustment, or change the eligibility requirements for benefits under the Fund.

**ODESSA FIREFIGHTERS'
RELIEF AND RETIREMENT FUND**

ACTUARIAL VALUATION
AS OF JANUARY 1, 2020

GASB 67/68 DISCLOSURE INFORMATION
AS OF DECEMBER 31, 2019



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

May 26, 2020

Board of Trustees
Odessa Firefighters'
Relief and Retirement Fund
1921 E. 37th St, Suite B
Odessa, TX 79762

Re: Odessa Firefighters' Relief and Retirement Fund

Dear Board:

We are pleased to present to the Board this report of the actuarial valuation of the Odessa Firefighters' Relief and Retirement Fund. Included are the related results for GASB Statements No. 67 and No. 68. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the funding period required to amortize any existing Unfunded Actuarial Accrued Liability. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of the Texas Local Fire Fighters' Retirement Act (TLFFRA) and Vernon's Texas Civil Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuations, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

In conducting the valuation, we have relied on personnel, plan design, financial reports, and asset information supplied by the Fund staff, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of January 1, 2019. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No. 67 and No. 68.

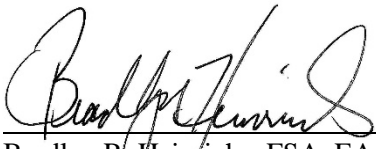
The undersigned are familiar with the immediate and long-term aspects of pension valuations, and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.


To our knowledge, no associate of Foster & Foster Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Odessa, nor does anyone at Foster & Foster Inc. act as a member of the Board of Trustees of the Odessa Firefighters' Relief and Retirement Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact me at 239-433-5500.

Respectfully submitted,

Foster & Foster Inc.

By: 
Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #20-6901

By: 
Drew D. Ballard, EA, MAAA
Enrolled Actuary #20-8193

BRH/lke

Enclosures

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SUMMARY OF REPORT

The actuarial valuation of the Odessa Firefighters' Relief and Retirement Fund, performed as of January 1, 2020, has been completed and the results are presented in this Report. The pension costs, compared with those developed in the January 1, 2019 actuarial valuation, are as follows:

<u>Valuation Date</u>	<u>New Contribs/Assump 1/1/2020</u>	<u>Old Contribs/Assump 1/1/2020</u>	<u>1/1/2019</u>
Current Normal Cost Rate % of Covered Annual Payroll	15.07%	14.47%	14.89%
Funding Measurements			
Actuarial Accrued Liability (AAL)	117,814,652	114,838,267	111,713,834
Actuarial Value of Assets (AVA)	43,361,750	43,361,750	43,886,792
Unfunded Actuarial Accrued Liability (UAAL = AAL - AVA)	74,452,902	71,476,517	67,827,042
Funded Ratio (AVA / AAL)	36.8%	37.8%	39.3%
Amortization Period	37.5 years	54.8 years	77.5 years
Contributions			
Expected City Contribution Rate	26.00%	20.00%	20.00%
Expected Member Contribution Rate	16.00%	18.00%	18.00%
Total Expected Contribution Rate	42.00%	38.00%	38.00%
Funding Costs			
City 20-Year Funding Cost	37.81%	34.57%	37.75%
City 30-Year Funding Cost ²³	29.20%	26.38%	28.86%
City 40-Year Funding Cost ¹	25.24%	22.65%	24.75%

¹ If the actuarial smoothing technique was removed and the market value of assets was utilized, the amortization period would be 35.9 years and the City 40-year funding cost would be 24.72% of payroll as of January 1, 2020 under the new contribution rates and assumptions.

² The Texas Pension Review Board Pension Funding Guidelines, effective June 30, 2017, state that plans with amortization periods that exceed 30 years as of June 30, 2017 should seek to reduce their amortization period to 30 years or less as soon as practicable, but not later than June 30, 2025.

³ Per Section 802.101(a) of the Texas Government Code, the actuarial valuation must include a recommended contribution rate needed for the system to achieve and maintain an amortization period that does not exceed 30 years.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 5.16% (Actuarial Asset Basis) which fell short of the 7.75% assumption and an average salary increase of 17.73% which exceeded the 6.56% assumption. However, the overall payroll growth of 8.52% compared to the 3.50% payroll growth assumption contributed to a reduction in the amortization period.

CHANGES SINCE PRIOR VALUATION

Benefit/Fund Changes

Since the previous valuation, the member contribution rate was lowered from 18.00% to 16.00% and the city contribution rate was increased from 20.00% to 26.00% effective January 1, 2020.

Actuarial Assumption/Method Changes

The valuation reflects the following assumption change:

- The investment return assumption was lowered from 7.75% to 7.50%, net of all expenses.

There were no method changes since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Contribs/Assump <u>1/1/2020</u>	Old Contribs/Assump <u>1/1/2020</u>	<u>1/1/2019</u>
A. Participant Data			
Actives	166	166	160
Service Retirees + DROP	144	144	144
Beneficiaries + Alt Payees	45	45	42
Disability Retirees	0	0	0
Terminated Vested	13	13	18
Total	<u>368</u>	<u>368</u>	<u>364</u>
Total Annual Payroll	13,880,183	13,880,183	12,790,903
Payroll Under Assumed Ret. Age	13,670,388	13,670,388	11,918,776
Annual Rate of Payments to:			
Service Retirees + DROP	6,607,802	6,607,802	6,529,654
Beneficiaries + Alt Payees	659,700	659,700	578,086
Disability Retirees	0	0	0
Terminated Vested	370,544	370,544	432,384
B. Assets			
Actuarial Value (AVA)	43,361,750	43,361,750	43,886,792
Market Value (MVA)	44,792,900	44,792,900	39,242,821
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement + Termination Benefits	42,639,418	40,693,748	36,748,868
Death Benefits	732,427	698,822	568,648
Disability Benefits	1,426,629	1,353,900	1,192,523
Service Retirees + DROP	84,021,838	82,112,523	81,531,246
Beneficiaries + Alt Payees	6,238,659	6,120,002	5,082,880
Disability Retirees	0	0	0
Terminated Vested	3,410,252	3,284,363	3,922,030
Total	<u>138,469,223</u>	<u>134,263,358</u>	<u>129,046,195</u>

	New Contribs/Assump <u>1/1/2020</u>	Old Contribs/Assump <u>1/1/2020</u>	<u>1/1/2019</u>
C. Liabilities - (Continued)			
Present Value of Future Salaries	154,273,992	151,242,427	131,988,105
Normal Cost (Entry Age Normal)			
Retirement + Termination Benefits	1,838,537	1,762,130	1,585,338
Death Benefits	53,264	51,664	41,992
Disability Benefits	93,413	89,931	80,897
Total Normal Cost	<u>1,985,214</u>	<u>1,903,725</u>	<u>1,708,227</u>
Present Value of Future Normal Costs	20,654,571	19,425,091	17,332,361
Actuarial Accrued Liability			
Retirement + Termination Benefits	23,659,094	22,852,631	20,788,377
Death Benefits	123,050	119,497	97,452
Disability Benefits	361,759	349,251	291,849
Inactives	93,670,749	91,516,888	90,536,156
Total Actuarial Accrued Liability (AAL)	<u>117,814,652</u>	<u>114,838,267</u>	<u>111,713,834</u>
Unfunded Actuarial Accrued Liability (UAAL)	74,452,902	71,476,517	67,827,042
Funded Ratio (AVA / AAL)	36.8%	37.8%	39.3%
D. Actuarial Present Value of Accrued Benefits			
Inactives	93,670,749	91,516,888	90,536,156
Actives	18,825,230	18,087,762	17,294,737
Total Present Value Accrued Benefits (PVAB)	<u>112,495,979</u>	<u>109,604,650</u>	<u>107,830,893</u>
Funded Ratio (MVA / PVAB)	39.8%	40.9%	36.4%

GAIN/LOSS ANALYSIS

a. Total (Gain)/Loss

1. Unfunded Actuarial Accrued Liability as of January 1, 2019	\$67,827,042
2. Normal Cost applicable for 2019	1,708,227
3. Interest on (1) and (2)	5,388,983
4. Contributions made during 2019	5,325,290
5. Interest on (4)	206,355
6. Expected UAAL as of January 1, 2020: (1)+(2)+(3)-(4)-(5)	69,392,607
7. Actual UAAL as of January 1, 2020 (Before Changes)	71,476,517
 Total Actuarial (Gain)/Loss	 2,083,910

b. (Gain)/Loss on Assets

1. Actuarial Value of Assets as of January 1, 2019	43,886,792
2. Contributions Less Benefit Payments	(2,720,185)
3. Expected Investment Earnings	3,295,819
4. Expected AVA as of January 1, 2020: (1)+(2)+(3)	44,462,426
5. Actual Actuarial Value of Assets as of January 1, 2020	43,361,750
 (Gain)/Loss on Assets	 1,100,676

c. (Gain)/Loss on Liabilities

1. Expected Actuarial Accrued Liability: a(6)+b(4)	113,855,033
2. Actual Actuarial Accrued Liability (Before Changes)	114,838,267
 (Gain)/Loss on Liabilities	 983,234

HISTORY OF GAIN/LOSS

Valuation as of January 1,	Actuarial (Gain)/Loss	(Gain)/Loss on Assets	(Gain)/Loss on Liabilities
2020	2,083,910	1,100,676	983,234
2019	3,386,702	2,106,090	1,280,612
2018	1,088,552	827,957	260,595
2017	12,245	1,303,788	(1,291,543)

COMPARISON OF CONTRIBUTION RATES TO ACTUARIALLY DETERMINED CONTRIBUTION BENCHMARK

Pursuant to the adopted Funding Policy, an Actuarially Determined Contribution (ADC) benchmark has been created for comparative purposes only and was constructed under the actuarial assumptions and methods identical to those disclosed in this report, except as follows:

Amortization Period – The ADC benchmark is determined in conjunction with each actuarial valuation by determining the fixed-rate contribution rates that would result in a 30-year amortization period as of the valuation date.

Payroll Growth Assumption – The ADC benchmark is calculated using a payroll growth assumption that is the lesser of 3.0% and the average payroll growth of the Odessa Fire Department over the last ten (10) years.

Determination of ADC Benchmark Payroll Growth Assumption

Covered Payroll as of:

1/1/2020	13,880,183
1/1/2009 ¹	8,437,868

(a) Average Annual Rate ¹	4.63%
(b) ADC Assumption	3.00%

Lesser of (a) and (b) 3.00%

<i>Valuation as of January 1,</i>	<i>City of Odessa Contribution Rate</i>	<i>30-Year ADC Benchmark</i>	<i>City Contribution Excess/(Shortfall)</i>
2020	26.00%	30.96%	(4.96%)

¹ A valuation was not performed as of January 1, 2010. Therefore, the Average Annual Rate shown is the average payroll growth over the last eleven (11) years.

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	193,203.09	193,203.09
Checking Account	13,827.58	13,827.58
Total Cash and Equivalents	207,030.67	207,030.67
Receivables:		
Member Contributions in Transit	117,166.30	117,166.30
City Contributions in Transit	134,376.90	134,376.90
Investment Income	215,871.13	215,871.13
Total Receivable	467,414.33	467,414.33
Investments:		
Corporate Bonds	27.90	2.79
Mutual Funds:		
Fixed Income	7,910,858.38	8,178,470.75
Equity	31,102,047.69	32,640,455.65
Pooled/Common/Commingled Funds:		
Real Estate	3,227,544.26	3,310,558.58
Total Investments	42,240,478.23	44,129,487.77
Fixed Assets	7,222.00	7,222.00
Total Assets	42,922,145.23	44,811,154.77
<u>LIABILITIES</u>		
Payables:		
Investment Expenses	14,681.21	14,681.21
Administrative Expenses	3,573.99	3,573.99
Total Liabilities	18,255.20	18,255.20
NET POSITION RESTRICTED FOR PENSIONS	42,903,890.03	44,792,899.57

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED DECEMBER 31, 2019
Market Value Basis

ADDITIONS

Contributions:

Member	2,510,746.61
City	2,814,542.93

Total Contributions	5,325,289.54
---------------------	--------------

Investment Income:

Net Realized Gain (Loss)	5,496,938.20	
Unrealized Gain (Loss)	669,665.46	
Net Increase in Fair Value of Investments		6,166,603.66
Interest & Dividends		2,435,829.37
Less Investment Expense ¹		(91,233.99)

Net Investment Income	8,511,199.04
-----------------------	--------------

Total Additions	13,836,488.58
-----------------	---------------

DEDUCTIONS

Distributions to Members:

Benefit Payments	6,605,569.98
Lump Sum DROP Distributions	393,769.38
Lump Sum Death Benefit Distributions	20,000.00
Refunds of Member Contributions	1,026,135.56

Total Distributions	8,045,474.92
---------------------	--------------

Administrative Expense	240,935.01
------------------------	------------

Total Deductions	8,286,409.93
------------------	--------------

Net Increase in Net Position	5,550,078.65
------------------------------	--------------

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	39,242,820.92
-----------------------	---------------

End of the Year	44,792,899.57
-----------------	---------------

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION
December 31, 2019

Actuarial Assets for funding purposes are developed by recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Plan Year Ending	Gain/(Loss)	<u>Gains/(Losses) Not Yet Recognized</u>				
		Amounts Not Yet Recognized by Valuation Year				
		2020	2021	2022	2023	2024
12/31/2015	(5,141,457)	0	0	0	0	0
12/31/2016	(199,971)	(39,995)	0	0	0	0
12/31/2017	2,891,405	1,156,562	578,281	0	0	0
12/31/2018	(6,588,165)	(3,952,899)	(2,635,266)	(1,317,633)	0	0
12/31/2019	5,334,353	4,267,482	3,200,611	2,133,740	1,066,869	0
Total		1,431,150	1,143,626	816,107	1,066,869	0

<u>Development of Investment Gain/(Loss)</u>	
Market Value of Assets, 12/31/2018	39,242,821
Contributions Less Benefit Payments	(2,720,185)
Expected Investment Earnings*	2,935,911
Actual Net Investment Earnings	8,270,264
2019 Actuarial Investment Gain/(Loss)	<u>5,334,353</u>

*Expected Investment Earnings = $0.0775 * [39,242,821 + 0.5 * (2,720,185)]$

<u>Development of Actuarial Value of Assets</u>	
(1) Market Value of Assets, 12/31/2019	44,792,900
(2) Gain/(Loss) Not Yet Recognized	1,431,150
(3) Actuarial Value of Assets, 12/31/2019, (1) - (2)	<u>43,361,750</u>

(A) 12/31/2018 Actuarial Assets: 43,886,792

(I) Net Investment Income:	
1. Interest and Dividends	2,435,829
2. Realized Gain (Loss)	5,496,938
3. Unrealized Gain (Loss)	669,665
4. Change in Actuarial Value	(6,075,121)
5. Investment & Administrative Expenses	(332,169)
Total	<u>2,195,143</u>

(B) 12/31/2019 Actuarial Assets: 43,361,750

Actuarial Asset Rate of Return = $2I/(A+B-I)$: 5.16%
Market Value of Assets Rate of Return: 21.83%

Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis) (1,100,676)

12/31/2019 Limited Actuarial Assets: 104 43,361,750

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
DECEMBER 31, 2019
Actuarial Asset Basis

REVENUES

Contributions:		
Member	2,510,746.61	
City	2,814,542.93	
Total Contributions		5,325,289.54
Earnings from Investments:		
Interest & Dividends	2,435,829.37	
Net Realized Gain (Loss)	5,496,938.20	
Unrealized Gain (Loss)	669,665.46	
Change in Actuarial Value	(6,075,121.00)	
Total Earnings and Investment Gains		2,527,312.03

EXPENDITURES

Distributions to Members:		
Benefit Payments	6,605,569.98	
Lump Sum DROP Distributions	393,769.38	
Lump Sum Death Benefit Distributions	20,000.00	
Refunds of Member Contributions	1,026,135.56	
Total Distributions		8,045,474.92
Expenses:		
Investment related ¹	91,233.99	
Administrative	240,935.01	
Total Expenses		332,169.00
Change in Net Assets for the Year		(525,042.35)
Net Assets Beginning of the Year		43,886,791.92
Net Assets End of the Year ²		43,361,749.57

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

²Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	<u>1/1/2017</u>	<u>1/1/2018</u>	<u>1/1/2019</u>	<u>1/1/2020</u>
<u>Actives - Hired before 1/1/2017</u>				
Number	161	142	119	103
Average Current Age	33.6	34.3	35.3	36.7
Average Age at Employment	25.4	25.5	25.5	25.4
Average Past Service	8.2	8.9	9.8	11.3
Average Annual Salary	\$70,673	\$75,204	\$79,640	\$92,693
<u>Actives - Hired on or after 1/1/2017</u>				
Number	0	23	41	63
Average Current Age	N/A	25.4	25.6	25.9
Average Age at Employment	N/A	24.8	24.5	24.5
Average Past Service	N/A	0.6	1.1	1.4
Average Annual Salary	N/A	\$51,718	\$59,553	\$65,445
<u>Service Retirees + DROP</u>				
Number	136	139	144	144
Average Current Age	62.5	62.8	63.1	63.7
Average Annual Benefit	\$42,845	\$44,428	\$45,345	\$45,888
<u>Beneficiaries + Alt Payees</u>				
Number	44	43	42	45
Average Current Age	70.4	70.3	70.6	70.5
Average Annual Benefit	\$12,843	\$13,172	\$13,764	\$14,660
<u>Disability Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Terminated Vested</u>				
Number	15	13	18	13
Average Current Age ¹	44.9	44.6	43.8	44.4
Average Annual Benefit ¹	\$31,537	\$32,653	\$30,885	\$30,879

¹ Reflects members entitled to a future annual benefit from the plan.

AGE AND SERVICE DISTRIBUTION

ATTAINED AGE	PAST SERVICE											TOTAL
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	
15 - 19	2	0	0	0	0	0	0	0	0	0	0	2
20 - 24	12	8	4	2	1	0	0	0	0	0	0	27
25 - 29	11	7	9	2	5	15	0	0	0	0	0	49
30 - 34	2	1	4	3	0	8	5	0	0	0	0	23
35 - 39	2	1	1	1	3	11	5	4	0	0	0	28
40 - 44	0	0	0	0	0	4	7	6	0	0	0	17
45 - 49	0	0	0	0	0	0	1	5	5	2	0	13
50 - 54	0	0	0	0	0	0	0	1	4	2	0	7
55 - 59	0	0	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	29	17	18	8	9	38	18	16	9	4	0	166

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2019	160
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
ii. Non-vested, awaiting refund	(1)
iii. Non-vested, full lump sum distribution received	(20)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(1)
f. DROP	<u>0</u>
g. Continuing participants	137
h. New entrants	<u>29</u>
i. Total active life participants in valuation	166

2. Non-Active lives

	Service Retirees, DROP Receiving <u>Benefits</u>	Beneficiaries, Alt. Payees Receiving <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested Deferred	<u>Total</u>
a. Number prior valuation	144	42	0	18	204
Retired	3	0	0	(2)	1
DROP	0	0	0	0	0
Vested Deferred	0	0	0	2	2
Death, With Survivor	(3)	3	0	0	0
Death, No Survivor	0	(1)	0	0	(1)
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	(4)	(4)
Rehires	0	0	0	(1)	(1)
QDRO	0	1	0	0	1
Expired Annuities	0	0	0	0	0
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	144	45	0	13	202

ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rates

Active Lives:

PubS-2010 Mortality Table for Employees.

Retiree and Vested Terminated Lives:

PubS-2010 Mortality Table for Healthy Retirees.

Contingent Survivor Lives:

PubS-2010 Mortality Table for Contingent Survivors.

Disabled Lives:

PubS-2010 Mortality Table for Disabled Retirees.

The mortality assumptions for all participants are sex distinct with mortality improvement projected 5 years beyond the valuation date using scale MP-2019 (previously MP-2018) and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.

Retirement Age

Members who had attained age 45 and completed 15 years of service as of December 31, 2016:

<u>Years Following 50/20</u>	<u>Rate</u>
0	20.0%
1	10.0
2	35.0
3	50.0
4	66.7
5	66.7
6+	100.0

The assumed rates of retirement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Members hired prior to January 1, 2017 who had not attained age 45 and completed 15 years of service as of December 31, 2016:

<u>Years Following 50/20</u>	<u>Rate</u>
0 - 4	12.5%
5	25.0
6	33.3
7	50.0
8+	100.0

We feel these are reasonable based upon plan provisions and long-term experience.

Retirement Age (cont'd)

Members hired on and after January 1, 2017:

<u>Years Following 55/25</u>	<u>Rate</u>
0	25.0%
1	33.3
2	50.0
3+	100.0

We feel these are reasonable based upon plan provisions.

Termination Rates

<u>Service</u>	<u>Rate</u>
<5	10.0%
5-6	7.0
7-9	2.0
10-19	4.0
20+	3.0

The assumed rates of termination were approved in conjunction with an actuarial experience study dated July 19, 2016.

Disability Rates

Sample rates are displayed below.

<u>Age</u>	<u>Rate</u>
25	0.094%
35	0.082%
45	0.168%
55	0.429%

The assumed rates of disablement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Interest Rate

7.50% (previously 7.75%) per year, compounded annually, net of expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases

<u>Service</u>	<u>Increase</u>
0	10.0%
1	9.0
2	8.0
3	7.0
4	6.5
5-14	6.0
15+	5.5

The assumed rates of salary increase were approved in conjunction with an actuarial experience study dated July 19, 2016.

<u>Payroll Growth</u>	3.50% per year for amortization of the Unfunded Actuarial Accrued Liability. This was approved in conjunction with an actuarial experience study dated July 19, 2016.
<u>Funding Method</u>	Entry Age Normal Actuarial Cost Method
<u>Marital Status</u>	100% of actives are assumed to be married at time of benefit commencement. Males are assumed to be two years older than their spouses.
<u>Dependent Children</u>	Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 20.
<u>Contribution Rates</u>	Members – 16.00% (previously 18.00%) City – 26.00% (previously 20.00%)
<u>Payment Form</u>	90% of the eligible retiring members are assumed to elect the Basic DROP. The remaining 10% of retiring members are assumed to elect a regular service retirement. These were approved in conjunction with an actuarial experience study dated July 19, 2016.
<u>Actuarial Asset Method</u>	All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.
<u>COLA</u>	<p>Actives and retired members are assumed to receive the cost-of-living adjustments to which they are entitled in accordance with the plan document. The specific COLA provisions are illustrated in the summary of plan provisions section of the report.</p> <p>Additionally, it is assumed that there is a 40% probability that the Ad-HOC COLA will be paid to members hired on or after January 31, 2013. This 40% assumption is subject to further modification in future valuations based on the assumed rate of investment return, as well as the asset allocation of the Fund and the expected long-term return by asset class.</p>
<u>Miscellaneous</u>	The valuation was performed using 50 percent, rather than 72 percent, of average salary in the plan's disability benefit formula. The lower percentage was used to reflect the fact that the City of Odessa pays disability benefits under its long term disability insurance policy until a firefighter reaches age 65. Starting at age 65, the plan begins paying benefits.

SUMMARY OF BENEFIT PROVISIONS

<u>Credited Service</u>	Period of continuous employment covered by the Fund during which a member pays into, and keeps on deposit in the Fund, the contributions required by the Fund. Credited Service will be calculated in completed months.
<u>Compensation</u>	Total pay including regular, longevity and overtime compensation and compensation received during a period of sick leave or vacation/holiday leave, but excluding lump sum distributions for unused sick leave or vacation/holiday leave.
<u>Average Salary</u>	<p><i>Frozen Benefit:</i> Average Compensation for the highest five of the last ten years of Credited Service prior to December 31, 2016.</p> <p><i>Post-2016 Benefit:</i> Average Compensation for the highest five years of Credited Service.</p>
<u>Member Contributions</u>	16.00% of Compensation.
<u>Service Retirement</u>	
Date	<p><i>Frozen Benefit:</i> Attainment of age 50 and 20 years of Credited Service.</p> <p><i>Post-2016 Benefit:</i> Attainment of age 55 and 25 years of Credited Service.</p>
Benefit	<p><i>Frozen Benefit:</i> 3.60% of Average Salary for each year of Credited Service prior to December 31, 2016 (maximum = 72% of Average Salary) <u>plus</u> a longevity benefit equal to \$107 per month for each year of Credited Service in excess of 20 years prior to December 31, 2016.</p> <p><i>Post-2016 Benefit:</i> 2.88% of Average Salary for each year of Credited Service on and after January 1, 2017. The maximum total benefit (Frozen plus Post-2016) may not exceed 72% of Average Salary at retirement.</p>
Form of Benefit	<p><i>Frozen Benefit:</i> Life Annuity with two-thirds (2/3) continued to Surviving Spouse for married members and Life Annuity for unmarried members at retirement.</p> <p><i>Post-2016 Benefit:</i> Life Annuity.</p>

Early Retirement

Date

Frozen Benefit: Attainment of 20 years of Credited Service.

Post-2016 Benefit: Attainment of age 50 and completion of 25 years of Credited Service.

Benefit

Equal to the Service Retirement as shown above multiplied by an actuarial reduction factor based on age at time of commencement.

Supplemental Benefit

Eligibility

Satisfied requirements for Normal or Early Retirement (not payable prior to attaining age 50). Also, must have completed 20 years of Credited Service as of December 31, 2016.

Benefit

Effective October 1, 2000, \$500 per month payable for life of the member and extended for the life of an eligible Surviving Spouse.

Payment

The supplemental benefit is not included with any lump-sum amounts accumulated in DROP accounts, as it does not begin until after the member has retired and terminated employment. Also, the supplemental benefit is not subject to any cost-of-living adjustments.

Cost-of-Living Adjustment

Retired between January 1, 2000 and October 1, 2000 (completion of at least 20 years of service)

\$37 COLA payable each January 1 following commencement of benefits

Hired prior to January 31, 2013 and retired on or after October 1, 2000 (completion of at least 20 years of service)

1.00% applied to frozen benefit only (minimum of \$37 for members who completed 20 years of service as of December 31, 2016) payable each January 1 following commencement of benefits.

Hired on or after January 31, 2013

1.0% Ad-Hoc COLA applied to frozen benefit only beginning on August 1 following the fifth anniversary of the commencement, provided the Fund's investment performance is not less than a rolling 5-year average of 8.50%.

Additionally, no COLA benefits are available to members who commence vested deferred benefits or disability retirement benefits. All COLA benefits provided to eligible survivors will be reduced as in the same manner the basic benefit is reduced for death benefits.

There will be no COLA applied to benefits accrued on and after January 1, 2017.

Thirteenth (13th) Check

An additional benefit payment (“13th check”) will be paid to members who retire on or after January 1, 2019 with 25 or more years of Credited Service if the amortization period remains under 20 years for a 10-year projection period. Members hired prior to January 1, 1997 will accrue 10% of their monthly benefit for each year of Credited Service on and after January 1, 2017. Members hired on or after January 1, 1997 will accrue 10% of their monthly benefit for each year in excess of 25 years of Credited Service. The maximum accrual will be 100% of the monthly benefit payable as a 13th check.

Disability

A member who qualifies for a disability retirement benefit will receive a monthly retirement income equal to the sum of: 1) 72% of Average Salary, plus 2) a longevity benefit equal to \$107 per month for each year of Credited Service in excess of 20 years.

Death Benefits

Surviving Spouse of Member:

Two-thirds (2/3) of the member’s accrued benefit, as described under the Service Retirement benefit provision.

Dependent Children of Member:

Each child is entitled to 9.61% of the member’s Average Salary, payable until age 18 or until age 22 as long as the child remains a full-time student.

Lump Sum Death Benefit

A \$10,000 lump sum death benefit is paid to the spouse or designated beneficiary of an active member or service retiree provided the member did not elect to receive a lump sum cash benefit in lieu of the lump-sum death benefit.

Deferred Retirement Option Program

Option 1 (Basic/Regular)

Eligibility	Satisfaction of Service Retirement requirements. Also, must have completed 20 years of Credited Service as of December 31, 2016.
Participation Period	Not to exceed 36 months.
Accumulation	Sum of the monthly Service Retirement benefit the member would have received if had retired on the DROP election date (with 4.0% annual interest crediting for members participating in DROP prior to January 1, 2017) plus an amount equal to the member contributions to the fund while a DROP participant.

Option 2 (Immediate)

Eligibility	Satisfaction of Service Retirement requirements. Also, must have completed 20 years of Credited Service as of December 31, 2016.
Benefit	Under the immediate DROP, a member may elect to receive one of the following:

<u>Percentage of Accrued Benefit</u>	<u>Lump-Sum Amount (Number of Reduced Benefit Payments)</u>
92.5%	12
85.0%	24
77.5%	36

Option 3 (Backdated/Retroactive)

Eligibility	Attainment of age 52 and 20 years of Credited Service. Also, must have completed 20 years of Credited Service as of December 31, 2016.
Participation Period	Not to exceed 36 months.
Accumulation	Sum of the monthly Service Retirement benefit the member would have received if had retired on the Retroactive DROP election date plus an amount equal to the member contributions to the fund made between the Retroactive DROP election date and actual retirement date.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various actuarial assumptions. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss impacts the plan's amortization period. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's amortization period. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization period could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, amortization periods can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization period can increase significantly even if all assumptions other than the payroll growth assumption are realized since anticipated contributions rely upon membership payroll.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.
- Amortization Period: Risks associated with the items outlined above will inherently create varying liabilities and assets resulting in volatility in the amortization period. Actuarial losses on assets and liabilities will lead to longer amortization periods, while actuarial gains on assets and liabilities will lead to shorter amortization periods.

- Contribution Risk: This risk results from the potential that the total annual contributions, based on fixed-rates for the City and membership, may deviate from actuarially determined contributions, as illustrated on page 5. The actuarially determined contributions are adjusted in conjunction with each actuarial valuation to take into account the deviation in actual versus expected experience between valuation dates. Fixed-rate contribution structures include the risk that scheduled contributions do not reflect the actual cost of plan benefits, meaning that in order to maintain actuarially sound funding levels, contribution rate increases or benefit reductions may be required.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared among active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on the risk characteristics and risk tolerance of the plan. For example, plans with a large amount of liability attributable to retirees have a shorter time horizon to recover from losses (such as investment experience losses due to lower than expected investment returns) than plans where the majority of the liability is attributable to active members. For this reason, highly mature plans with a substantial liability due to retirees and inactive members have less tolerance for risk. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or negative net cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan and assessing risk, we have provided some relevant metrics in the section titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has stayed about the same over the last four valuations, indicating that the plan’s maturity level has not significantly changed.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 79.5%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability has decreased from 45.1% to 36.8% over the last four valuations.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, is -6.6%. This indicates that contributions are not currently covering the plan’s benefit payments and administrative expenses.

It is important to note that we have identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the actuarial valuation, however, it is not an exhaustive list of potential risks that could be considered. Advanced modelling, as well as the identification of additional risks, can be helpful and can be provided upon request of the Board.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>1/1/2017</u>	<u>1/1/2018</u>	<u>1/1/2019</u>	<u>1/1/2020</u>
<u>Support Ratio</u>				
Total Actives	161	165	160	166
Total Inactives	195	195	204	202
Actives / Inactives	82.6%	84.6%	78.4%	82.2%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	82,163,225	84,317,883	90,536,156	93,670,749
Total Accrued Liability	106,053,931	106,469,004	111,713,834	117,814,652
Inactive AL / Total AL	77.5%	79.2%	81.0%	79.5%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	47,850,754	45,868,667	43,886,792	43,361,750
Total Accrued Liability	106,053,931	106,469,004	111,713,834	117,814,652
AVA / Total Accrued Liability	45.1%	43.1%	39.3%	36.8%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(2,741,190)	(4,887,036)	(3,614,916)	(2,961,120)
Market Value of Assets (MVA)	44,259,466	45,718,416	39,242,821	44,792,900
Ratio	-6.2%	-10.7%	-9.2%	-6.6%

¹ Determined as total contributions minus benefit payments and administrative expenses.

VALUATION NOTES

Total Annual Payroll is the projected annual rate of pay for the year beginning on the valuation date of all covered Members.

Payroll under Assumed Retirement Age is the projected annual rate of pay for the year beginning on the valuation date of all active participants who are not subject to a 100% probability of retirement on the valuation date.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Normal (Current Year's) Cost is determined for each participant as the present value of future benefits, determined as of the Member's entry age, amortized as a level percentage of compensation over the anticipated number of years of participation, determined as of the entry age.

Individual Entry Age Normal Actuarial Cost Method (Level Percent of Compensation) is the method used to determine required contributions under the Fund. The use of this method involves the systematic funding of the Normal Cost (described above) and the Unfunded Accrued (Past Service) Liability. The actuarial accrued liability for active participants is the difference between the present value of future benefits and the present value of future Normal Costs. The actuarial accrued liability for inactive participants is the present value of future benefits.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the actuarial value of assets.

STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	193,203
Checking Account	13,828
Total Cash and Equivalents	207,031
Receivables:	
Member Contributions in Transit	117,166
City Contributions in Transit	134,377
Investment Income	215,871
Total Receivable	467,414
Investments:	
Corporate Bonds	3
Mutual Funds:	
Fixed Income	8,178,471
Equity	32,640,456
Pooled/Common/Commingled Funds:	
Real Estate	3,310,558
Total Investments	44,129,488
Fixed Assets	7,222
Total Assets	44,811,155
<u>LIABILITIES</u>	
Payables:	
Investment Expenses	14,681
Administrative Expenses	3,574
Total Liabilities	18,255
NET POSITION RESTRICTED FOR PENSIONS	44,792,900

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED DECEMBER 31, 2019
Market Value Basis

ADDITIONS

Contributions:

Member	2,510,747	
City	2,814,543	
Total Contributions		5,325,290
Investment Income:		
Net Increase in Fair Value of Investments	6,166,604	
Interest & Dividends	2,435,829	
Less Investment Expense ¹	(91,234)	
Net Investment Income		8,511,199
Total Additions		13,836,489

DEDUCTIONS

Distributions to Members:

Benefit Payments	6,605,570	
Lump Sum DROP Distributions	393,769	
Lump Sum Death Benefit Distributions	20,000	
Refunds of Member Contributions	1,026,136	
Total Distributions		8,045,475
Administrative Expense		240,935
Total Deductions		8,286,410
Net Increase in Net Position		5,550,079
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		39,242,821
End of the Year		44,792,900

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

NOTES TO THE FINANCIAL STATEMENTS

(For the Year Ended December 31, 2019)

Plan Administration

The Odessa Firefighters' Relief and Retirement Fund is established under the authority of the Texas Local Fire Fighter's Retirement Act (TLFFRA). The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of three Members elected from and by the fund Members, two representatives of the City of Odessa, Texas, and two citizen Members.

Plan Membership as of January 1, 2019:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	186
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	18
Active Plan Members	160
	364

Benefits Provided

The Plan provides retirement, disability and death benefits.

A summary of the benefit provisions can be found in the January 1, 2019 Actuarial Valuation Report for the Odessa Firefighters' Relief and Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

Incorporated are the benefit changes for measurement date December 31, 2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Member Contributions: 16.00% of Compensation.

City Contribution: 26.00%.

Investments

Investment Policy:

The following was the Board's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
US Large Cap Equity	45%
US Small/Mid Cap Equity	10%
International Equity	10%
US Direct Real Estate	10%
US Aggregate Bond	25%
Total	100%

Concentrations:

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's Fiduciary Net Position.

Rate of Return:

For the year ended December 31, 2019, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 22.48 percent.

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Deferred Retirement Option Program**Option 1 (Basic/Regular):**

Eligibility: Satisfaction of Service Retirement requirements. Also, must have completed 20 years of Credited Service as of December 31, 2016.

Participation period: Not to exceed 36 months.

Accumulation: Sum of the monthly Service Retirement benefit the member would have received if had retired on the DROP election date (with 4.0% annual interest crediting for members participating in DROP prior to January 1, 2017) plus an amount equal to the member contributions to the fund while a DROP participant.

Option 2 (Immediate):

Eligibility: Satisfaction of Service Retirement requirements. Also, must have completed 20 years of Credited Service as of December 31, 2016.

Benefit: Under the immediate DROP, a member may elect to receive one of the following:

<u>Percentage of Accrued Benefit</u>	<u>Lump-Sum Amount (Number of Reduced Benefit Payments)</u>
92.50%	12
85.00%	24
77.50%	36

Option 3 (Backdated/Retroactive):

Eligibility: Attainment of age 52 and 20 years of Credited Service. Also, must have completed 20 years of Credited Service as of December 31, 2016.

Participation period: Not to exceed 36 months.

Accumulation: Sum of the monthly Service Retirement benefit the member would have received if had retired on the Retroactive DROP election date plus an amount equal to the member contributions to the fund made between the Retroactive DROP election date and actual retirement date.

The DROP balance as December 31, 2019 is \$1,970,592.

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on December 31, 2019 were as follows:

Total Pension Liability	\$ 115,740,646
Plan Fiduciary Net Position	\$ (44,792,900)
Sponsor's Net Pension Liability	<u>\$ 70,947,746</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	38.70%

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2019 updated to December 31, 2019 using the following actuarial assumptions:

Inflation	3.00%
Salary Increases	Service based
Discount Rate	7.50%
Investment Rate of Return	7.50%

Mortality Rate Active Lives:

PubS-2010 Mortality Table for Employees.

Mortality Rate Retiree and Vested Terminated Lives:

PubS-2010 Mortality Table for Healthy Retirees.

Mortality Rate Contingent Survivor Lives:

PubS-2010 Mortality Table for Contingent Survivors.

Mortality Rate Disabled Lives:

PubS-2010 Mortality Table for Disabled Retirees.

The mortality assumptions for all participants are sex distinct with mortality improvement projected 5 years beyond the valuation date using scale MP-2019 and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated July 19, 2016.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019, the inflation rate assumption of the investment advisor was 3.00%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of December 31, 2019 are summarized in the following table:

Asset Class	Long Term Expected Real Rate of Return ¹
US Large Cap Equity	4.60%
US Small/Mid Cap Equity	5.00%
International Equity	5.20%
US Direct Real Estate	4.50%
US Aggregate Bond	1.50%

¹ Based on JPM Capital Market Assumptions for a 10-15 year time horizon.

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Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.50 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.26% (based on the weekly rate closest to but not later than the measurement date of the the S&P Municipal Bond 20 Year High Grade Rate Index); and the resulting single discount rate is 7.50%.

	1% Decrease 6.50%	Current Discount Rate 7.50%	1% Increase 8.50%
Sponsor's Net Pension Liability	\$ 84,614,861	\$ 70,947,746	\$ 59,582,902

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Years

	12/31/2019	12/31/2018	12/31/2017
Total Pension Liability			
Service Cost	3,392,859	2,903,081	3,032,911
Interest	7,369,947	7,315,638	7,144,829
Changes of benefit terms	(124,561)	-	-
Differences between Expected and Actual Experience	1,702,009	439,047	(512,807)
Changes of assumptions	(46,115,955)	16,259,992	(4,776,661)
Contributions - Buy Back	-	28,184	2,160
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	(7,986,081)	(9,474,664)
Net Change in Total Pension Liability	(41,821,176)	18,959,861	(4,584,232)
Total Pension Liability - Beginning	157,561,822	138,601,961	143,186,193
Total Pension Liability - Ending (a)	<u>\$115,740,646</u>	<u>\$157,561,822</u>	<u>\$138,601,961</u>
Plan Fiduciary Net Position			
Contributions - Employer	2,814,543	2,462,215	2,540,454
Contributions - Employee	2,510,747	2,193,053	2,250,882
Contributions - Buy Back	-	28,184	2,160
Net Investment Income	8,511,199	(2,860,679)	6,345,986
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	(7,986,081)	(9,474,664)
Administrative Expense	(240,935)	(312,287)	(205,868)
Other	-	-	-
Net Change in Plan Fiduciary Net Position	5,550,079	(6,475,595)	1,458,950
Plan Fiduciary Net Position - Beginning	39,242,821	45,718,416	44,259,466
Plan Fiduciary Net Position - Ending (b)	<u>\$ 44,792,900</u>	<u>\$ 39,242,821</u>	<u>\$ 45,718,416</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 70,947,746</u>	<u>\$118,319,001</u>	<u>\$ 92,883,545</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	38.70%	24.91%	32.99%
Covered Payroll	\$ 13,948,594	\$ 12,183,628	\$ 12,504,900
Net Pension Liability as a percentage of Covered Payroll	508.64%	971.13%	742.78%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Years

	12/31/2016	12/31/2015	12/31/2014
Total Pension Liability			
Service Cost	3,989,437	3,979,638	3,785,085
Interest	6,320,711	7,224,216	6,960,820
Changes of benefit terms	(13,926,192)	-	-
Differences between Expected and Actual Experience	3,000,886	-	-
Changes of assumptions	(21,332,887)	26,869,167	-
Contributions - Buy Back	-	4,320	-
Benefit Payments, including Refunds of Employee Contributions	(6,432,676)	(6,159,471)	(5,472,566)
Net Change in Total Pension Liability	(28,380,721)	31,917,870	5,273,338
Total Pension Liability - Beginning	171,566,914	139,649,044	134,375,706
Total Pension Liability - Ending (a)	<u>\$143,186,193</u>	<u>\$171,566,914</u>	<u>\$139,649,044</u>
Plan Fiduciary Net Position			
Contributions - Employer	2,036,444	1,850,057	1,941,250
Contributions - Employee	1,895,306	1,850,058	1,793,009
Contributions - Buy Back	-	4,320	-
Net Investment Income	3,328,013	(1,188,316)	2,454,391
Benefit Payments, including Refunds of Employee Contributions	(6,432,676)	(6,159,471)	(5,472,566)
Administrative Expense	(240,265)	(139,345)	(96,214)
Other	-	-	2,009,989
Net Change in Plan Fiduciary Net Position	586,822	(3,782,697)	2,629,859
Plan Fiduciary Net Position - Beginning	43,672,644	47,455,341	44,825,482
Plan Fiduciary Net Position - Ending (b)	<u>\$ 44,259,466</u>	<u>\$ 43,672,644</u>	<u>\$ 47,455,341</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 98,926,727</u>	<u>\$127,894,270</u>	<u>\$ 92,193,703</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	30.91%	25.46%	33.98%
Covered Payroll	\$ 12,635,373	\$ 12,333,720	\$ 11,774,395
Net Pension Liability as a percentage of Covered Payroll	782.93%	1036.95%	783.00%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios*Changes of benefit terms:*

For measurement date 12/31/2019, the member contribution rate was lowered from 18.00% to 16.00% and the city contribution rate was increased from 20.00% to 26.00% effective January 1, 2020.

For measurement date 12/31/2016, amounts reported as changes of benefit terms resulted from numerous changes to the plan's benefit structure. The changes were the following:

- Plan benefits were frozen for all active participants as of December 31, 2016.
 - Effective January 1, 2017, the following changes were made for future benefit accruals:
 - The benefit accrual rate was reduced from 3.60% per year to 2.88% per year
 - The average final compensation period was amended from the highest 5 of the last 10 years to the last 5 years at retirement
 - The total benefit (not including the frozen longevity or supplemental benefit) may not exceed 72% of average final compensation
 - The normal retirement age for future benefit accruals is payable unreduced at attainment of age 55 and completion of 25 years of service (actuarially reduced following attainment of age 50 and completion of 20 years of service)
 - The longevity benefit for service in excess of 20 years was removed
 - The supplemental benefit was removed
 - The normal form of annuity payment for future benefit accruals is a life annuity
 - The cost-of-living adjustment (COLA) was removed for future benefit accruals
 - The vesting period was increased from 10 years to 20 years (members with 10+ years as of December 31, 2016 are 100% vested in their frozen benefit)
 - The DROP was eliminated for members with less than 20 years of service as of January 1, 2017
 - The interest crediting was removed for future DROP participants
 - A "13th check" benefit was implemented based on future actuarial soundness
 - The member contribution rate was increased from 15.00% to 18.00% of earnings
- Additionally, the City contribution rate was increased from 16.00% to 20.00% of payroll.

Changes of assumptions:

For purposes of determining the GASB discount rate at the 12/31/2019 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 7.50%. The discount rate was increased from 4.70% to 7.50%. Other actuarial changes of assumptions were the following:

- The investment return assumption was lowered from 7.75% to 7.50%, net of all expenses.

For purposes of determining the GASB discount rate at the 12/31/2018 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 4.70%. The discount rate was decreased from 5.32% to 4.70%. Other actuarial changes of assumptions were the following:

- The mortality rates were updated to reflect the PubS-2010 (amount-weighted) tables.

For purposes of determining the GASB discount rate at the 12/31/2017 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 5.32%. The discount rate was increased from 5.05% to 5.32%.

For purposes of determining the GASB discount rate at the 12/31/2016 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 5.05%. The discount rate was increased from 3.99% to 5.05%. Other actuarial changes of assumptions in the 2016 year were the following:

As a result of the increase in the normal retirement age as described under the changes of benefit terms, the retirement rates were amended for members who had not attained age 45 and completed 15 years of service as of December 31, 2016. Also, a new set of retirement rates were established for members hired on or after January 1, 2017.

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Continued Changes of assumptions:

For purposes of determining the GASB discount rate at the 12/31/2015 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 3.99%.

The discount rate has been lowered from 5.14% to 3.99%. Other actuarial changes of assumptions reported in the 2015 year are listed below. These other changes can be found in the 01.01.2016 Valuation report:

- Salary Increases
- Retirement Rates
- Retirement/DROP Election
- Withdrawal Rates
- Disability Rates

SCHEDULE OF CONTRIBUTIONS

Last 10 Years

Fiscal Year Ended	Contributions in relation to the			Contributions as a percentage of Covered	
	Contractually Required Contribution	Contractually Required Contributions	Contribution Deficiency (Excess)	Covered Payroll	Payroll
12/31/2019	\$ 2,814,543	\$ 2,814,543	\$ -	\$ 13,948,594	20.18%
12/31/2018	\$ 2,462,215	\$ 2,462,215	\$ -	\$ 12,183,628	20.21%
12/31/2017	\$ 2,540,454	\$ 2,540,454	\$ -	\$ 12,504,900	20.32%
12/31/2016	\$ 2,036,444	\$ 2,036,444	\$ -	\$ 12,635,373	16.12%
12/31/2015	\$ 1,850,057	\$ 1,850,057	\$ -	\$ 12,333,720	15.00%
12/31/2014	\$ 1,810,939	\$ 1,941,250	\$ (130,311)	\$ 11,774,395	16.49%

Notes to Schedule

Methods and assumptions used to determine contribution rates:

Mortality Rates:

Active Lives:

PubS-2010 Mortality Table for Employees.

Retiree and Vested Terminated Lives:

PubS-2010 Mortality Table for Health Retirees.

Contingent Survivor Lives:

PubS-2010 Mortality Table for Disabled Retirees.

Disabled Lives:

PubS-2010 Mortality Table for Disabled Retirees.

The mortality assumptions for all participants are sex distinct with mortality improvement projected 5 years beyond the valuation date using scale MP-2018 and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.

Retirement Age:

Members who had attained age 45 and completed 15 years of service as of December 31, 2016:

Years Following 50/20	Rate
0	20.0%
1	10.0
2	35.0
3	50.0
4	66.7
5	66.7
6+	100.0

The assumed rates of retirement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Members hired prior to January 1, 2017 who had not attained age 45 and completed 15 years of service as of December 31, 2016:

Years Following 50/20	Rate
0 - 4	12.5%
5	25.0
6	33.3
7	50.0
8+	100.0

We feel these are reasonable based upon plan provisions and long-term experience.

Members hired on and after January 1, 2017:

Years Following 55/25	Rate
0	25.0%
1	33.3
2	50.0
3+	100.0

We feel these are reasonable based upon plan provisions.

Termination Rates:

Service	Rate
<5	10.0%
5-6	7.0
7-9	2.0
10-19	4.0
20+	3.0

The assumed rates of termination were approved in conjunction with an actuarial experience study dated July 19, 2016.

Disability Rates:

Sample rates are displayed below.

Age	Termination Rate
25	0.094%
35	0.082%
45	0.168%
55	0.429%

The assumed rates of disablement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Interest Rate:

7.75% per year, compounded annually, net of expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases:

Service	Increase
0	10.0%
1	9.0
2	8.0
3	7.0
4	6.5
5-14	6.0
15+	5.5

The assumed rates of salary increase were approved in conjunction with an actuarial experience study dated July 19, 2016.

Payroll Growth:

3.50% per year for amortization of the Unfunded Actuarial Accrued Liability. This was approved in conjunction with an actuarial experience study dated July 19, 2016

Funding Method:

Entry Age Normal Actuarial Cost Method.

Marital Status:

100% of actives are assumed to be married at time of benefit commencement. Males are assumed to be two years older than their spouses.

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Dependent Children:	Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 20.
Contribution Rates:	Members - 18.00% City - 20.00%
Payment Form:	90% of the retiring members are assumed to elect the Basic DROP. The remaining 10% of retiring members are assumed to elect a regular service retirement. These were approved in conjunction with an actuarial experience study dated July 19, 2016.
Actuarial Asset Method:	All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.
COLA:	Actives and retired members are assumed to receive the cost-of-living adjustments to which they are entitled in accordance with the plan document. The specific COLA provisions are illustrated in the summary of plan provisions section of the report. Additionally, it is assumed that there is a 40% probability that the Ad-HOC COLA will be paid to members hired on or after January 31, 2013. This 40% assumption is subject to further modification in future valuations based on the assumed rate of investment return, as well as the asset allocation of the Fund and the expected long-term return by asset class.
Miscellaneous:	The valuation was performed using 50 percent, rather than 72 percent, of average salary in the plan's disability benefit formula. The lower percentage was used to reflect the fact that the City of Odessa pays disability benefits under its long term disability insurance policy until a firefighter reaches age 65. Starting at age 65, the plan begins paying benefits.

SCHEDULE OF INVESTMENT RETURNS
Last 10 Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
12/31/2019	22.48%
12/31/2018	-6.53%
12/31/2017	15.15%
12/31/2016	0.08%
12/31/2015	-2.58%
12/31/2014	5.13%

NOTES TO THE FINANCIAL STATEMENTS

(For the Year Ended September 30, 2020)

Plan Description

The Odessa Firefighters' Relief and Retirement Fund is established under the authority of the Texas Local Fire Fighter's Retirement Act (TLFFRA). The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of three Members elected from and by the fund Members, two representatives of the City of Odessa, Texas, and two citizen Members.

Each person employed by the City Fire Department as a full-time Firefighter becomes a Member of the Plan as a condition of employment. All Firefighters are therefore eligible for plan benefits as provided for in the plan document by applicable law.

Plan Membership as of January 1, 2019:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	186
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	18
Active Plan Members	160
	364

Benefits Provided

The Plan provides retirement, disability and death benefits.

A summary of the benefit provisions can be found in the January 1, 2019 Actuarial Valuation Report for the Odessa Firefighters' Relief and Retirement Fund prepared by Foster & Foster Actuaries and Consultants.

Incorporated are the benefit changes for measurement date December 31, 2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Member Contributions: 16.00% of Compensation.

City Contribution: 26.00%.

Net Pension Liability

The measurement date is December 31, 2019.

The measurement period for the pension expense was January 1, 2019 to December 31, 2019.

The reporting period is October 1, 2019 through September 30, 2020.

The Sponsor's Net Pension Liability was measured as of December 31, 2019.

The Total Pension Liability used to calculate the Net Pension Liability was determined as of that date.

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2019 updated to December 31, 2019 using the following actuarial assumptions:

Inflation	3.00%
Salary Increases	Service based
Discount Rate	7.50%
Investment Rate of Return	7.50%

Mortality Rate Active Lives:

PubS-2010 Mortality Table for Employees.

Mortality Rate Retiree and Vested Terminated Lives:

PubS-2010 Mortality Table for Healthy Retirees.

Mortality Rate Contingent Survivor Lives:

PubS-2010 Mortality Table for Contingent Survivors.

Mortality Rate Disabled Lives:

PubS-2010 Mortality Table for Disabled Retirees.

The mortality assumptions for all participants are sex distinct with mortality improvement projected 5 years beyond the valuation date using scale MP-2019 and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated July 19, 2016.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019, the inflation rate assumption of the investment advisor was 3.00%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of December 31, 2019 are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return ¹
US Large Cap Equity	45%	4.60%
US Small/Mid Cap Equity	10%	5.00%
International Equity	10%	5.20%
US Direct Real Estate	10%	4.50%
US Aggregate Bond	25%	1.50%
Total	100%	

¹ Based on JPM Capital Market Assumptions for a 10-15 year time horizon.

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.50 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 3.26% (based on the weekly rate closest to but not later than the measurement date of the the S&P Municipal Bond 20 Year High Grade Rate Index); and the resulting single discount rate is 7.50%.

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Reporting Period Ending September 30, 2019	\$ 157,561,822	\$ 39,242,821	\$ 118,319,001
Changes for a Year:			
Service Cost	3,392,859	-	3,392,859
Interest	7,369,947	-	7,369,947
Differences between Expected and Actual Experience	1,702,009	-	1,702,009
Changes of assumptions	(46,115,955)	-	(46,115,955)
Changes of benefit terms	(124,561)	-	(124,561)
Contributions - Employer	-	2,814,543	(2,814,543)
Contributions - Employee	-	2,510,747	(2,510,747)
Net Investment Income	-	8,511,199	(8,511,199)
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	(8,045,475)	-
Administrative Expense	-	(240,935)	240,935
Net Changes	(41,821,176)	5,550,079	(47,371,255)
Reporting Period Ending September 30, 2020	\$ 115,740,646	\$ 44,792,900	\$ 70,947,746

Sensitivity of the Net Pension Liability to changes in the Discount Rate.

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.50%	7.50%	8.50%
Sponsor's Net Pension Liability	\$ 84,614,861	\$ 70,947,746	\$ 59,582,902

Pension Plan Fiduciary Net Position.

Detailed information about the pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

**FINAL PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED
INFLOWS OF RESOURCES RELATED TO PENSIONS**
FISCAL YEAR SEPTEMBER 30, 2019

For the year ended September 30, 2019, the Sponsor has recognized a Pension Expense of \$10,113,970.

On September 30, 2019, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Differences between Expected and Actual Experience	1,866,319	341,872
Changes of assumptions	22,506,385	13,850,883
Net difference between Projected and Actual Earnings on Pension Plan investments	4,127,305	
Employer contributions subsequent to the measurement date	2,797,226	-
Total	<u>\$ 31,297,235</u>	<u>\$ 14,192,755</u>

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date has been recognized as a reduction of the Net Pension Liability in the year ended September 30, 2019.

Other amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in Pension Expense as follows:

Year ended September 30:	
2020	\$ 4,945,516
2021	\$ 3,946,243
2022	\$ (522,031)
2023	\$ 3,154,352
2024	\$ 2,783,174
Thereafter	\$ -

**PRELIMINARY PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND
DEFERRED INFLOWS OF RESOURCES RELATED TO PENSIONS
FISCAL YEAR SEPTEMBER 30, 2020**

For the year ended September 30, 2020, the Sponsor will recognize a Pension Expense of \$1,868,129.

On September 30, 2020, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between Expected and Actual Experience	2,711,336	256,404
Changes of assumptions	15,318,191	47,929,257
Net difference between Projected and Actual Earnings on Pension Plan investments	-	1,961,453
Employer contributions subsequent to the measurement date	TBD	-
Total	<u>TBD</u>	<u>\$ 50,147,114</u>

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the year ended September 30, 2020.

Other amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in Pension Expense as follows:

Year ended September 30:	
2021	\$ (4,573,007)
2022	\$ (9,041,281)
2023	\$ (5,364,898)
2024	\$ (5,736,076)
2025	\$ (7,402,325)
Thereafter	\$ -

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

Reporting Period Ending Measurement Date	09/30/2020 12/31/2019	09/30/2019 12/31/2018	09/30/2018 12/31/2017
Total Pension Liability			
Service Cost	3,392,859	2,903,081	3,032,911
Interest	7,369,947	7,315,638	7,144,829
Changes of benefit terms	(124,561)	-	-
Differences between Expected and Actual Experience	1,702,009	439,047	(512,807)
Changes of assumptions	(46,115,955)	16,259,992	(4,776,661)
Contributions - Buy Back	-	28,184	2,160
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	(7,986,081)	(9,474,664)
Net Change in Total Pension Liability	(41,821,176)	18,959,861	(4,584,232)
Total Pension Liability - Beginning	157,561,822	138,601,961	143,186,193
Total Pension Liability - Ending (a)	<u>\$115,740,646</u>	<u>\$157,561,822</u>	<u>\$138,601,961</u>
Plan Fiduciary Net Position			
Contributions - Employer	2,814,543	2,462,215	2,540,454
Contributions - Employee	2,510,747	2,193,053	2,250,882
Contributions - Buy Back	-	28,184	2,160
Net Investment Income	8,511,199	(2,860,679)	6,345,986
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	(7,986,081)	(9,474,664)
Administrative Expense	(240,935)	(312,287)	(205,868)
Other	-	-	-
Net Change in Plan Fiduciary Net Position	5,550,079	(6,475,595)	1,458,950
Plan Fiduciary Net Position - Beginning	39,242,821	45,718,416	44,259,466
Plan Fiduciary Net Position - Ending (b)	<u>\$ 44,792,900</u>	<u>\$ 39,242,821</u>	<u>\$ 45,718,416</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 70,947,746</u>	<u>\$118,319,001</u>	<u>\$ 92,883,545</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	38.70%	24.91%	32.99%
Covered Payroll	\$ 13,948,594	\$ 12,183,628	\$ 12,504,900
Net Pension Liability as a percentage of Covered Payroll	508.64%	971.13%	742.78%

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

Reporting Period Ending Measurement Date	09/30/2017 12/31/2016	09/30/2016 12/31/2015	09/30/2015 12/31/2014
Total Pension Liability			
Service Cost	3,989,437	3,979,638	3,785,085
Interest	6,320,711	7,224,216	6,960,820
Changes of benefit terms	(13,926,192)	-	-
Differences between Expected and Actual Experience	3,000,886	-	-
Changes of assumptions	(21,332,887)	26,869,167	-
Contributions - Buy Back	-	4,320	-
Benefit Payments, including Refunds of Employee Contributions	(6,432,676)	(6,159,471)	(5,472,566)
Net Change in Total Pension Liability	(28,380,721)	31,917,870	5,273,338
Total Pension Liability - Beginning	171,566,914	139,649,044	134,375,706
Total Pension Liability - Ending (a)	<u>\$143,186,193</u>	<u>\$171,566,914</u>	<u>\$139,649,044</u>
Plan Fiduciary Net Position			
Contributions - Employer	2,036,444	1,850,057	1,941,250
Contributions - Employee	1,895,306	1,850,058	1,793,009
Contributions - Buy Back	-	4,320	-
Net Investment Income	3,328,013	(1,188,316)	2,454,391
Benefit Payments, including Refunds of Employee Contributions	(6,432,676)	(6,159,471)	(5,472,566)
Administrative Expense	(240,265)	(139,345)	(96,214)
Other	-	-	2,009,989
Net Change in Plan Fiduciary Net Position	586,822	(3,782,697)	2,629,859
Plan Fiduciary Net Position - Beginning	43,672,644	47,455,341	44,825,482
Plan Fiduciary Net Position - Ending (b)	<u>\$ 44,259,466</u>	<u>\$ 43,672,644</u>	<u>\$ 47,455,341</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 98,926,727</u>	<u>\$127,894,270</u>	<u>\$ 92,193,703</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	30.91%	25.46%	33.98%
Covered Payroll	\$ 12,635,373	\$ 12,333,720	\$ 11,774,395
Net Pension Liability as a percentage of Covered Payroll	782.93%	1036.95%	783.00%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios*Changes of benefit terms:*

For measurement date 12/31/2019, the member contribution rate was lowered from 18.00% to 16.00% and the city contribution rate was increased from 20.00% to 26.00% effective January 1, 2020.

For measurement date 12/31/2016, amounts reported as changes of benefit terms resulted from numerous changes to the plan's benefit structure. The changes were the following:

- Plan benefits were frozen for all active participants as of December 31, 2016.
 - Effective January 1, 2017, the following changes were made for future benefit accruals:
 - The benefit accrual rate was reduced from 3.60% per year to 2.88% per year
 - The average final compensation period was amended from the highest 5 of the last 10 years to the last 5 years at retirement
 - The total benefit (not including the frozen longevity or supplemental benefit) may not exceed 72% of average final compensation
 - The normal retirement age for future benefit accruals is payable unreduced at attainment of age 55 and completion of 25 years of service (actuarially reduced following attainment of age 50 and completion of 20 years of service)
 - The longevity benefit for service in excess of 20 years was removed
 - The supplemental benefit was removed
 - The normal form of annuity payment for future benefit accruals is a life annuity
 - The cost-of-living adjustment (COLA) was removed for future benefit accruals
 - The vesting period was increased from 10 years to 20 years (members with 10+ years as of December 31, 2016 are 100% vested in their frozen benefit)
 - The DROP was eliminated for members with less than 20 years of service as of January 1, 2017
 - The interest crediting was removed for future DROP participants
 - A "13th check" benefit was implemented based on future actuarial soundness
 - The member contribution rate was increased from 15.00% to 18.00% of earnings
- Additionally, the City contribution rate was increased from 16.00% to 20.00% of payroll.

Changes of assumptions:

For purposes of determining the GASB discount rate at the 12/31/2019 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 7.50%. The discount rate was increased from 4.70% to 7.50%. Other actuarial changes of assumptions were the following:

- The investment return assumption was lowered from 7.75% to 7.50%, net of all expenses.

For purposes of determining the GASB discount rate at the 12/31/2018 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 4.70%. The discount rate was decreased from 5.32% to 4.70%. Other actuarial changes of assumptions were the following:

- The mortality rates were updated to reflect the PubS-2010 (amount-weighted) tables.

For purposes of determining the GASB discount rate at the 12/31/2017 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 5.32%. The discount rate was increased from 5.05% to 5.32%.

For purposes of determining the GASB discount rate at the 12/31/2016 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 5.05%. The discount rate was increased from 3.99% to 5.05%. Other actuarial changes of assumptions in the 2016 year were the following:

As a result of the increase in the normal retirement age as described under the changes of benefit terms, the retirement rates were amended for members who had not attained age 45 and completed 15 years of service as of December 31, 2016. Also, a new set of retirement rates were established for members hired on or after January 1, 2017.

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Continued Changes of Assumptions:

For purposes of determining the GASB discount rate at the 12/31/2015 measurement date, a depletion date projection as of that date have been performed. The results of this projection showed a single discount rate of 3.99%.

The discount rate has been lowered from 5.14% to 3.99%. Other actuarial changes of assumptions reported in the 2015 year are listed below. These other changes can be found in the 01.01.2016 Valuation report:

- Salary Increases
- Retirement Rates
- Retirement/DROP Election
- Withdrawal Rates
- Disability Rates

SCHEDULE OF CONTRIBUTIONS

Last 10 Fiscal Years

Measurement date	Contractually Required Contribution	Contributions in relation to the Contractually Required Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a percentage of Covered Payroll
12/31/2019	TBD	TBD	TBD	TBD	TBD
12/31/2018	TBD	TBD	TBD	TBD	TBD
12/31/2017	TBD	TBD	TBD	TBD	TBD
12/31/2016	TBD	TBD	TBD	TBD	TBD
12/31/2015	TBD	TBD	TBD	TBD	TBD
12/31/2014	TBD	TBD	TBD	TBD	TBD

Notes to Schedule

Methods and assumptions used to determine contribution rates:

Mortality Rates:

Active Lives:

PubS-2010 Mortality Table for Employees.

Retiree and Vested Terminated Lives:

PubS-2010 Mortality Table for Health Retirees.

Contingent Survivor Lives:

PubS-2010 Mortality Table for Disabled Retirees.

Disabled Lives:

PubS-2010 Mortality Table for Disabled Retirees.

The mortality assumptions for all participants are sex distinct with mortality improvement projected 5 years beyond the valuation date using scale MP-2018 and a base year of 2010. We feel these assumptions sufficiently accommodate anticipated future mortality improvements.

Retirement Age:

Members who had attained age 45 and completed 15 years of service as of December 31, 2016:

Years Following 50/20	Rate
0	20.0%
1	10.0
2	35.0
3	50.0
4	66.7
5	66.7
6+	100.0

The assumed rates of retirement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Members hired prior to January 1, 2017 who had not attained age 45 and completed 15 years of service as of December 31, 2016:

Years Following 50/20	Rate
0 - 4	12.5%
5	25.0
6	33.3
7	50.0
8+	100.0

We feel these are reasonable based upon plan provisions and long-term experience.

Members hired on and after January 1, 2017:

Years Following 55/25	Rate
0	25.0%
1	33.3
2	50.0
3+	100.0

We feel these are reasonable based upon plan provisions.

Termination Rates:

Service	Rate
<5	10.0%
5-6	7.0
7-9	2.0
10-19	4.0
20+	3.0

The assumed rates of termination were approved in conjunction with an actuarial experience study dated July 19, 2016.

Disability Rates:

Sample rates are displayed below.

Age	Termination Rate
25	0.094%
35	0.082%
45	0.168%
55	0.429%

The assumed rates of disablement were approved in conjunction with an actuarial experience study dated July 19, 2016.

Interest Rate:

7.75% per year, compounded annually, net of expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases:

Service	Increase
0	10.0%
1	9.0
2	8.0
3	7.0
4	6.5
5-14	6.0
15+	5.5

The assumed rates of salary increase were approved in conjunction with an actuarial experience study dated July 19, 2016.

Payroll Growth:

3.50% per year for amortization of the Unfunded Actuarial Accrued Liability. This was approved in conjunction with an actuarial experience study dated July 19, 2016

Funding Method:

Entry Age Normal Actuarial Cost Method.

Marital Status:

100% of actives are assumed to be married at time of benefit commencement. Males are assumed to be two years older than their spouses.

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Dependent Children:	Each member is assumed to have two children. The first child is assumed to have been born when the member was age 25. The second child is assumed to be two years younger. It is also assumed that benefits will be paid until each child reaches the age of 20.
Contribution Rates:	Members - 18.00% City - 20.00%
Payment Form:	90% of the retiring members are assumed to elect the Basic DROP. The remaining 10% of retiring members are assumed to elect a regular service retirement. These were approved in conjunction with an actuarial experience study dated July 19, 2016.
Actuarial Asset Method:	All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.
COLA:	Actives and retired members are assumed to receive the cost-of-living adjustments to which they are entitled in accordance with the plan document. The specific COLA provisions are illustrated in the summary of plan provisions section of the report. Additionally, it is assumed that there is a 40% probability that the Ad-HOC COLA will be paid to members hired on or after January 31, 2013. This 40% assumption is subject to further modification in future valuations based on the assumed rate of investment return, as well as the asset allocation of the Fund and the expected long-term return by asset class.
Miscellaneous:	The valuation was performed using 50 percent, rather than 72 percent, of average salary in the plan's disability benefit formula. The lower percentage was used to reflect the fact that the City of Odessa pays disability benefits under its long term disability insurance policy until a firefighter reaches age 65. Starting at age 65, the plan begins paying benefits.

EXPENSE DEVELOPMENT AND AMORTIZATION SCHEDULES

The following information is not required to be disclosed but is provided for informational purposes.

FINAL COMPONENTS OF PENSION EXPENSE
FISCAL YEAR SEPTEMBER 30, 2019

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 92,883,545	\$ 21,143,777	\$ 19,565,896	\$ -
Employer Contributions made after 12/31/2018	-	-	2,797,226	-
Total Pension Liability Factors:				
Service Cost	2,903,081	-	-	2,903,081
Interest	7,315,638	-	-	7,315,638
Changes in benefit terms	-	-	-	-
Contributions - Buy Back	28,184	-	-	28,184
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	439,047	-	439,047	-
Current year amortization of experience difference	-	(85,468)	(573,320)	487,852
Change in assumptions about future economic or demographic factors or other inputs	16,259,992	-	16,259,992	-
Current year amortization of change in assumptions	-	(4,351,591)	(7,188,192)	2,836,601
Benefit Payments, including Refunds of Employee Contributions	(7,986,081)	-	-	-
Net change	18,959,861	(4,437,059)	11,734,753	13,571,356
Plan Fiduciary Net Position:				
Contributions - Employer	2,462,215	-	(1,898,566)	-
Contributions - Employee	2,193,053	-	-	(2,193,053)
Contributions - Buy Back	28,184	-	-	(28,184)
Projected Net Investment Income	3,403,099	-	-	(3,403,099)
Difference between projected and actual earnings on Pension Plan investments	(6,263,778)	-	6,263,778	-
Current year amortization	-	(630,971)	(2,485,634)	1,854,663
Benefit Payments, including Refunds of Employee Contributions	(7,986,081)	-	-	-
Administrative Expenses	(312,287)	-	-	312,287
Net change	(6,475,595)	(630,971)	1,879,578	(3,457,386)
Ending Balance	\$ 118,319,001	\$ 16,075,747	\$ 33,180,227	\$ 10,113,970

PRELIMINARY COMPONENTS OF PENSION EXPENSE
FISCAL YEAR SEPTEMBER 30, 2020

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 118,319,001	\$ 16,075,747	\$ 33,180,227	\$ -
Employer Contributions made after 12/31/2019	-	-	TBD*	-
Total Pension Liability Factors:				
Service Cost	3,392,859	-	-	3,392,859
Interest	7,369,947	-	-	7,369,947
Changes in benefit terms	(124,561)	-	-	(124,561)
Contributions - Buy Back	-	-	-	-
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	1,702,009	-	1,702,009	-
Current year amortization of experience difference	-	(85,468)	(856,992)	771,524
Change in assumptions about future economic or demographic factors or other inputs	(46,115,955)	46,115,955	-	-
Current year amortization of change in assumptions	-	(12,037,581)	(7,188,194)	(4,849,387)
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	-	-	-
Net change	(41,821,176)	33,992,906	(6,343,177)	6,560,382
Plan Fiduciary Net Position:				
Contributions - Employer	2,814,543	-	(2,797,226)	-
Contributions - Employee	2,510,747	-	-	(2,510,747)
Contributions - Buy Back	-	-	-	-
Projected Net Investment Income	2,926,575	-	-	(2,926,575)
Difference between projected and actual earnings on Pension Plan investments	5,584,624	5,584,624	-	-
Current year amortization	-	(1,747,895)	(2,252,029)	504,134
Benefit Payments, including Refunds of Employee Contributions	(8,045,475)	-	-	-
Administrative Expenses	(240,935)	-	-	240,935
Net change	5,550,079	3,836,729	(5,049,255)	(4,692,253)
Ending Balance	\$ 70,947,746	\$ 53,905,382	TBD	\$ 1,868,129

* Employer Contributions subsequent to the measurement date made after December 31, 2019 but made on or before September 30, 2020 need to be added.

AMORTIZATION SCHEDULE - INVESTMENT

Increase (Decrease) in Pension Expense Arising from the Recognition of the of Differences Between Projected and Actual Earnings on Pension Plan
Investments

Plan year ending	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027
2019	\$ (5,584,624)	5	\$ -	\$ (1,116,924)	\$ (1,116,925)	\$ (1,116,925)	\$ (1,116,925)	\$ (1,116,925)	\$ -	\$ -	\$ -
2018	\$ 6,263,778	5	\$ 1,252,754	\$ 1,252,756	\$ 1,252,756	\$ 1,252,756	\$ 1,252,756	\$ -	\$ -	\$ -	\$ -
2017	\$ (3,105,250)	5	\$ (621,050)	\$ (621,050)	\$ (621,050)	\$ (621,050)	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (49,604)	5	\$ (9,921)	\$ (9,921)	\$ (9,921)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 4,996,363	5	\$ 999,273	\$ 999,273	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ 1,168,037	5	\$ 233,607	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 1,854,663	\$ 504,134	\$ (495,140)	\$ (485,219)	\$ 135,831	\$ (1,116,925)	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Plan year ending	Changes of Assumptions	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027
2019	\$ (46,115,955)	6	\$ -	\$ (7,685,990)	\$ (7,685,993)	\$ (7,685,993)	\$ (7,685,993)	\$ (7,685,993)	\$ (7,685,993)	\$ -	\$ -
2018	\$ 16,259,992	6	\$ 2,709,997	\$ 2,709,999	\$ 2,709,999	\$ 2,709,999	\$ 2,709,999	\$ 2,709,999	\$ -	\$ -	\$ -
2017	\$ (4,776,661)	6	\$ (796,110)	\$ (796,110)	\$ (796,110)	\$ (796,110)	\$ (796,110)	\$ -	\$ -	\$ -	\$ -
2016	\$ (21,332,887)	6	\$ (3,555,481)	\$ (3,555,481)	\$ (3,555,481)	\$ (3,555,481)	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 26,869,167	6	\$ 4,478,195	\$ 4,478,195	\$ 4,478,195	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 2,836,601	\$ (4,849,387)	\$ (4,849,390)	\$ (9,327,585)	\$ (5,772,104)	\$ (4,975,994)	\$ (7,685,993)	\$ -	\$ -

AMORTIZATION SCHEDULE - EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Plan year ending	Differences Between Expected and Actual Experience	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027
2019	\$ 1,702,009	6	\$ -	\$ 283,669	\$ 283,668	\$ 283,668	\$ 283,668	\$ 283,668	\$ 283,668	\$ -	\$ -
2018	\$ 439,047	6	\$ 73,172	\$ 73,175	\$ 73,175	\$ 73,175	\$ 73,175	\$ 73,175	\$ -	\$ -	\$ -
2017	\$ (512,807)	6	\$ (85,468)	\$ (85,468)	\$ (85,468)	\$ (85,468)	\$ (85,468)	\$ -	\$ -	\$ -	\$ -
2016	\$ 3,000,886	6	\$ 500,148	\$ 500,148	\$ 500,148	\$ 500,148	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 487,852	\$ 771,524	\$ 771,523	\$ 771,523	\$ 271,375	\$ 356,843	\$ 283,668	\$ -	\$ -